

SPECIFICATION NO. 3111  
G. M. NO. 98015 & 85737

SPECIFICATIONS  
FOR  
CONSTRUCTION  
OF  
30", 24" AND 20" GAS TRANSMISSION MAINS NOS. 132 AND 147  
FROM  
CRYSTAL SPRINGS LAKE TO MARTIN SUBSTATION  
FOR THE

PACIFIC GAS AND ELECTRIC COMPANY  
SAN FRANCISCO, CALIFORNIA

PREPARED BY  
DEPARTMENT OF ENGINEERING

J. A. Love (MEO)  
APPROVED BY \_\_\_\_\_  
\_\_\_\_\_  
DATE July 13, 1948



Branch

Reinforcing Ring

Reinforcing Saddle

Main

WELDING DETAIL

Bevel For Welding

1" 6" 6" 1" 1" 1" 12"

Ribs made of  $\frac{1}{2}$ " Steel Plate

Weld

Weld around

Weld Around Pipe

Bevel Both Ends For Welding

Saddle made of  $\frac{5}{8}$ " Steel Plate or pipe with .3125" wall

6" 1" 12" 5" 5" 45° 1" 5" 1" 5" 6" 1" 5" 6" 1" 5"

Weld around

Weld

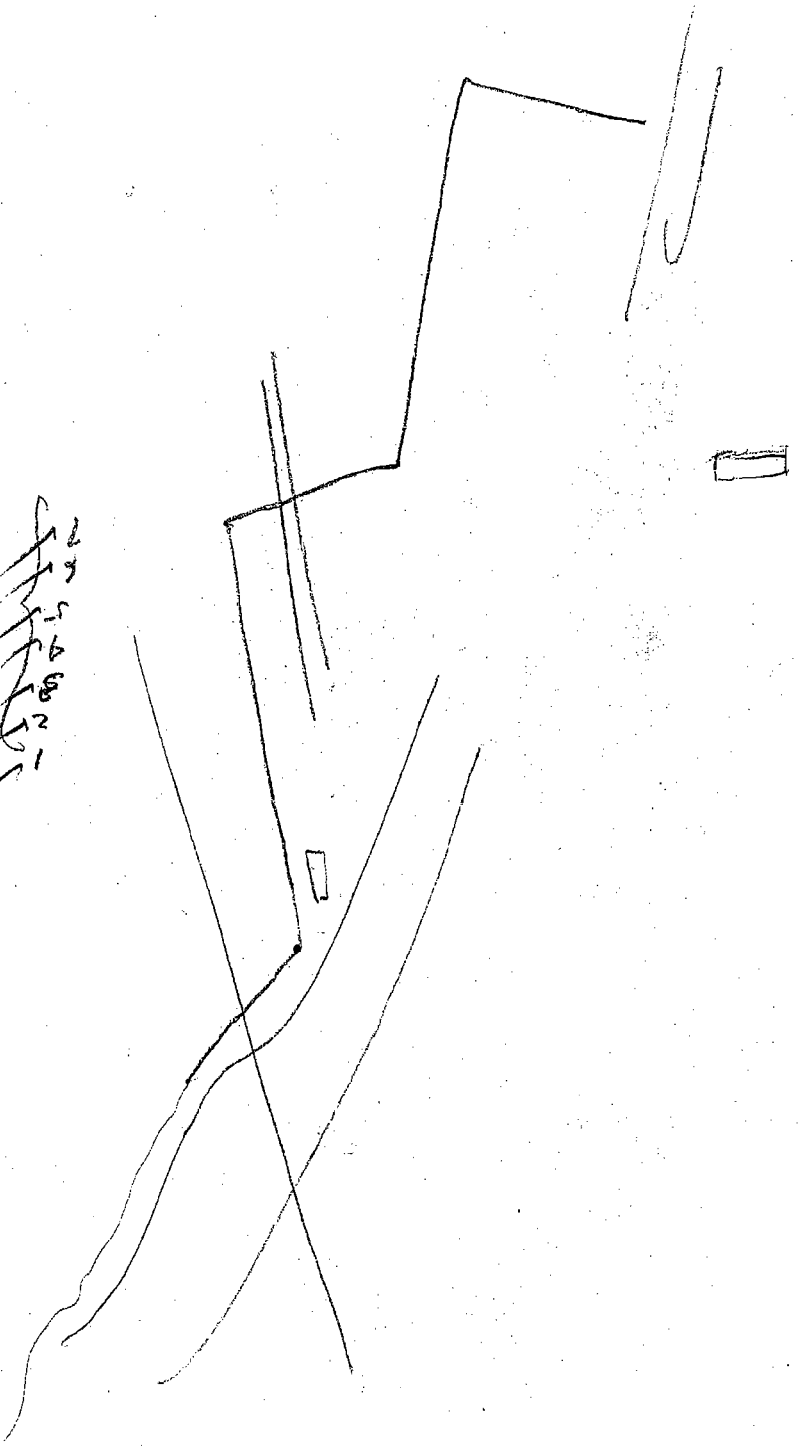
ITEM NO	MAIN		BRANCH		REINFORCING RING	DIMENSION		GWE PSI
	O.D.	Wall	O.D.	Wall		"A"	"H"	
1	26"	406"	26"	406"	375"	40"	24"	500
2	26"	406"	24"	375"	375"	38"	24"	
3	26"	406"	22"	375"	3125"	36"	24"	
4	26"	406"	20"	3125"	3125"	34"	24"	
5	26"	406"	16"	250"	250"	30"	24"	
6	24"	375"	24"	375"	3125"	38"	23"	
7	24"	375"	22"	375"	3125"	36"	23"	
8	24"	375"	20"	3125"	250"	34"	23"	
9	24"	375"	16"	250"	250"	30"	23"	
10	22"	375"	22"	375"	3125"	36"	22"	
11	22"	375"	20"	3125"	250"	34"	22"	
12	22"	375"	16"	250"	250"	30"	22"	
13	20"	3125"	20"	3125"	250"	34"	21"	
14	20"	3125"	16"	250"	250"	30"	21"	

- 1 Pipe Sections - Seamless Carbon Steel  
API - 5L - Grade B - Minimum Ultimate Tensile  
Strength 60,000 psi.
- 2 Reinforcing IR - Carbon Steel Tensile  
Strength 60,000 To 70,000 - Yield 55,000 To 65,000
- 3 Welding - All Welding Ends To Be Beveled And  
Joints Are Welded
- 4 "S" Value of 16000 p.s.i. Used in Design.
- 5 For Branches 12" and Under See - CS 100
- 6 Dimensions "X" and "Y" Shall be 4" unless  
stated otherwise on order.

APPROVED BY  <i>0AP</i>	GAS DEPARTMENT STANDARD FABRICATED TEES 20" TO 26" DEPARTMENT OF GAS OPERATION <b>PACIFIC GAS AND ELECTRIC CO.</b> SAN FRANCISCO, CALIFORNIA	
RECEIVED OF G. B. 1000 N. Marilla CH. 1000 G. B. 1000 DATE 2-2-41	ORDER NO. ORDER DATE ORDER BY	ORDER NO. <b>281554</b> ORDER BY ORDER NO. ORDER DATE ORDER BY
ORDER NO. ORDER DATE ORDER BY	ORDER NO. ORDER DATE ORDER BY	ORDER NO. <b>281551</b> ORDER DATE ORDER BY



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For  
CONSTRUCTION  
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30", 24" AND 20" GAS TRANSMISSION MAINS NOS. 132 AND 147  
FROM  
CRYSTAL SPRINGS LAKE TO MARTIN SUBSTATION  
FOR THE

PACIFIC GAS AND ELECTRIC COMPANY  
SAN FRANCISCO, CALIFORNIA

Comprising

Instructions to Bidders  
General Conditions  
Specific Conditions  
Form of Proposal  
Form of Agreement

**BIDDER—SIGN HERE** TO INDICATE  
THIS HAS BEEN USED IN PREPARING PROPOSAL

SIGNATURE.....

DATE.....

# INSTRUCTIONS AND INFORMATION TO BIDDERS

## 1. Location and Outline of Work

(a) The work for which proposals are requested comprises the construction of approximately 18 miles of 30" O.D., 1.6 miles of 24" O.D., and 2.1 miles of 20" O.D. high pressure, natural gas, transmission pipe lines together with meter set, valves and appurtenances to make a complete and working installation.

(b) The proposed 30" main commences at the northern terminus of Company's existing main 132 at the junction of Belmont Road and Canada Road, San Mateo County and extends northerly to Company's Martin Substation located at Geneva Avenue and Schwerin Street, Visitacion Valley, San Mateo County.

The 24" main together with approximately 1.7 miles of 20" main, links the Company's existing main #101 on El Camino Blvd. to mains #132 and #109 on Whipple Road near Canada Rd., via Brittan Avenue and Whipple Road. The remaining 0.4 miles of 20" links the proposed main #132 and the existing main #101 in the Martin Substation Yard at Geneva Avenue and Schwerin Street.

(c) The work will include the installation of blow-off valves with condensate lines at low spots in the gas pipe lines. There will be approximately eight of these installations in the entire project.

(d) The 30" pipe specified herein is 30" O.D. and will be furnished in 30 and 60 foot lengths. The 24" and 20" pipe are O.D. sizes and will be furnished in approximately 40 foot lengths. All pipe will be wrapped and will have plain ends beveled for welding. The wall thicknesses and estimated weights of the pipe are as follows:

<u>Pipe Size</u>	<u>Wall Thickness</u>	<u>Bare</u>	<u>(Weight in pounds per foot)</u>	
			<u>Single Wrap</u>	<u>Double Wrap</u>
30" O.D.	0.375	118.66	127.16	135.36
24" O.D.	0.28125	71.25	78.41	83.65
20" O.D.	0.28125	59.23	65.44	68.04

(e) The 24" and 20" pipe will be seamless and will conform to the A.P.I. Standards 5-L for grade B pipe. The 30" pipe is electric welded, longitudinal seam type and will have the following physical and chemical properties.

### Physical Properties

Maximum Transverse Yield 52,000 psi  
 " Ultimate strength 72,000 psi  
 Elongation in 2" 22%

### Chemical Properties

Carbon .30% maximum  
 Manganese 1.15% "  
 Phosphorous 0.045% "  
 Sulphur 0.05% "

(f) Meter sets, regulators, and valve installations not included in the specifications but which are required to make a complete and working installation will be offered for bid during the progress of the Contract. Contractor shall therefore be prepared to and shall submit a bid for this additional work when required by Company.

## 2. INTENT OF SPECIFICATIONS

The bidder shall make his proposal with the understanding that the specifications and drawings are intended to cover all the work to be performed, and unless expressly excluded, any and all work not mentioned or shown, but which may be necessary to complete any part of the work in a proper, substantial and workmanlike manner, shall be performed by the Contractor.

## 3. PROPOSALS

(a) Proposals must be made in the general form of the proposal attached, enclosed in a sealed envelope distinctly marked "Proposal" with the title of the work as given and delivered to the Purchasing Agent at the office of the Company, 245 Market Street, San Francisco at or before the appointed hour.

(b) The proposals must be signed with the full name and local address of the Bidder; if a co-partnership, by a member of the firm with the name and address of each member; if a corporation, by an officer in the corporate name, and with corporate seal.

(c) Unless otherwise stipulated herein, The Company reserves the right to reject any and all proposals to accept other than the lowest proposal, to accept one part of a proposal and reject the other, to affect a combination of proposals, and to waive any technical informalities in any proposal.

(d) In the event of the Bidder to whom the award is made, fails or refuses to execute the agreement, the Company may award the Contract in whole or in part to any of the other Bidders, or it may request new bids.

(e) A Bidder may, without prejudice to himself, withdraw his proposal before the time set for the opening of the bids, provided written request is made to the Purchasing Agent of the Company.

## 4. INFORMATION TO BE OBTAINED BY BIDDERS VISIT TO SITE

(a) It is necessary that the Bidders visit the site of the work to be performed hereunder and investigate fully all conditions pertaining to said work or affecting his operations. Among other things, the Bidder should inform himself fully regarding (1) the character and extent of the gas pipe line right and of way and designated construction areas adjacent thereto and of means of ingress/egress (2) the conditions governing transportation to and construction within said rights of way and construction areas; (3) all ground and water conditions including the location and nature of any surface, sub-surface, piping, conduit, or other obstructions which Contractor may encounter in performing the work. (4) The exact location of the pipe line where it is to be laid in streets; (5) the type of the existing pavement and sub-base. The Bidder is particularly cautioned to investigate fully all hazards and the safeguards that Contractor must provide for the protection of persons from injury and property from damage. The Bidder shall investigate all conditions governing the construction of the gas pipe line across creeks, water conduits, railroads and public or private roadways surfaced or unsurfaced.

(b) With respect to all the above requirements, the Bidder shall be solely responsible for the consequence of his neglect or lack of diligence in acquainting himself fully with all conditions influencing the work.

5. PAYMENTS

Payments under this Contract shall be made as follows:

(a) Monthly progress payments of 85% of the amount earned under this Contract to date of payment.

(b) Final payment of 15% will be retained by Company until 35 days after completion of work and filing of notice of completion. Subject thereto, said final payment will be made upon satisfactory passing of final pressure test as specified herein provided, however, that the payment shall not be withheld more than six months after the completion of the work to the satisfaction of the Company.

6. CONTRACTOR'S LICENSE

In order to receive consideration for work subject to the Contractors License Law of the State of California, the Bidder's proposal must contain a statement that he is licensed under said law and must indicate the number and the date of expiration of his license.

7. WORK BY THE COMPANY

The Company reserves the right to do whatever of its own work is deemed necessary during construction, and the Contractor shall make no claim for alleged damage caused thereby.

8. RESPONSIBILITY OF BIDDER

(a) Each Bidder may be required to furnish evidence satisfactory to the Company, that he has sufficient means and has had sufficient experience in the class of work called for, to enable him to complete the Contract satisfactorily.

(b) The Contractor to whom the work is awarded will be required to qualify for a surety and performance bond with a surety approved by the Company.

9. AWARD OF CONTRACT

The successful Bidder will be promptly notified and within five calendar days after notification, he shall sign the agreement in duplicate and deliver it to the Company, together with the bond, if required. After the agreement is signed by the Company, one of the executed copies will be delivered to the Contractor.

10. RETURN OF DRAWINGS AND SPECIFICATIONS

The Bidder shall return with his proposal all drawings, specifications, and other information and data loaned him for use in preparing his estimate and proposal.

11. SIGNATURE OF SPECIFICATIONS AND DRAWINGS.

For his own protection each Bidder shall sign the copy of specifications and each drawing used by him in preparing his proposal in the space provided therefor.

12. TIME OF COMPLETION

(a) Time is the essence of this Contract. It is essential that the entire project shall be completed and placed in operation in the shortest time practical, but in any case not later than November 15, 1948.

(b) Subject to the foregoing Bidder shall state in his proposal the shortest time in which he will complete the work after notification is given him to commence. He shall state time required for the 30" line, the 3.3 miles of 24" and 20" and the 0.4 miles of 20" as separate projects, and for the three sections if constructed concurrently. The time quoted will be an important factor in the award of the Contract.

13. SEGREGATION OF BID PRICES AND ACCOUNTING

(a) Immediately upon notification of the award, Contractor shall submit to Constructor for approval, a breakdown of all unit prices quoted in his proposal. Such itemization shall include the separate costs for loading, hauling, and distributing of pipe, excavation, lining and tacking, welding, field coating and wrapping of joints backfilling and such other items of work as are included in the quoted prices. This segregation when approved by Constructor will be the basis for determining the value of the work performed for the purposes of estimating progress payments.

(b) For purpose of said progress payments, Constructor will maintain a daily account of the work performed and the Contract value thereof, on the approved itemized basis.

14. DRAWING LIST

There are listed below the drawings accompanying these specifications which will govern the construction of the gas pipe lines and appurtenances described therein.

<u>Drawing No.</u>	<u>Sheet No.</u>	<u>Title</u>
B-3882	1 & 2	Gas Line along Whipple Road near Redwood City
B-3669	6 thru 12	Mt. View-Potrero Gas Line
381517	14 thru 20	Milpitas-San Francisco 22" HP Gas Transmission Line, via Skyline Blvd.
281050		Typical Installation of Casings and Vents under State Highway and Railroad Crossing.
181011		2" Blow-off Valve and 3/4" Condensate Line-Milpitas-San Francisco Main.



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## GENERAL CONDITIONS

### 1. DEFINITIONS:

Whenever these words occur in the specifications, they shall have the meanings following:

- (a) "Company": the Pacific Gas and Electric Company.
- (b) "Department of Engineering": the Department of Engineering of the Company.
- (c) "Constructor": the Engineer of General Construction of the Company or his duly authorized representative in charge of the work set forth herein.
- (d) "Engineer": the Chief Engineer of the Company or his duly authorized representative in charge of the work set forth herein.
- (e) "Contractor": the party or parties making a contract with the Company for this work.
- (f) "Bidder": the party or parties submitting a proposal for this work.
- (g) "Contract": includes the agreement, bond, specifications, drawings and Contractor's specifications, if any.
- (h) "Specifications": include the Instructions and Information to Bidders, the General and Specific Conditions of the Company, proposal form, if any, and addenda to all of these, if any.
- (i) "As Directed," "As Required," "As Permitted," "Approved," "Acceptable," "Satisfactory," means by or to the Constructor.
- (j) "Work": includes labor or materials, or both, as required hereunder.

### 2. GENERAL REQUIREMENTS:

- (a) The Contractor shall furnish all work and equipment, and unless otherwise provided shall prepare all shop drawings and pay all freight, cartage and handling charges necessary to complete the work as specified herein, in a manner satisfactory to the Company.
- (b) All contacts between the Contractor and the Company shall be through the Constructor.

### 3. DRAWINGS AND SPECIFICATIONS:

- (a) Drawings and specifications are supplementary and are to be taken in conjunction. The Contractor shall report to the Constructor in writing, any discrepancy or errors which come to his attention. Necessary work implied as included in the contract shall be included without extra cost to the Company. Figured dimensions shall be followed in preference to scaled dimensions.
- (b) Unless otherwise provided the Contractor shall make any necessary detailed drawings, subject to the approval of the Department of Engineering and shall be responsible for their practicability. Approval of such drawings by the Department of Engineering shall be general only and shall not relieve the Contractor of responsibility for correct construction, and the Contractor shall pay for any alterations required by his errors. All work shall be done in accordance with such approved drawings. Calling the Contractor's attention to errors does not place responsibility upon the Company for correctness of other features not mentioned.
- (c) Subsequent detail drawings shall not operate to modify the contract drawings. The Company will not be responsible for deviations from contract drawings unless a written statement of changes accompanies the drawings when submitted for approval.
- (d) The misplacement, addition or omission of a word or character shall not change the intent of the drawings and specifications, as set forth by the drawings and specifications as a whole.
- (e) At the completion of the work hereunder the Contractor shall return to the Company all drawings and specifications furnished him for use during the progress of the work.

### 4. NO WAIVER:

None of the provisions of the contract shall be considered waived by the Company except when such waiver is given in writing.

### 5. DISPUTED QUESTIONS:

These specifications and all annexed papers are intended to be self-explanatory, but should any discrepancy appear or any misunderstanding arise as to any conflict of provisions, or as to the import or meaning of any provision or stipulation contained in these specifications, the matter shall be referred to the Constructor, who shall decide the same. He shall also decide all questions which may arise between the parties relative to the actual work or construction, or the sufficiency of the performance hereunder.

### 6. LEGAL REQUIREMENTS:

- (a) Any prepaid communication directed to the Contractor at the address given in the proposal, and mailed, or written communication delivered in person to an authorized agent of the Contractor, shall constitute a sufficient service upon the Contractor for all purposes connected with this contract.
- (b) The Contractor, with respect to his own work only, shall obtain permits, serve necessary notices, arrange for inspections, pay fees and deposits, and shall observe all Federal, State, and municipal laws. If the Contractor observes that the drawings and specifications are at variance with





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~~of said work. All cutting and patching shall be in accordance with the best practice in the several trades and subject to the approval of the Constructor.~~

## 12. USE OF MATERIALS AND FACILITIES FURNISHED BY COMPANY:

(a) Unless otherwise specified, the Contractor shall provide all necessary tools, equipment, and plant, adequate and suitable to meet all requirements for the work. Said tools, equipment, and plant, at all times, shall be maintained in good repair and efficient operating condition; and any which are deemed by the Constructor to be unfit shall be removed from the job and replaced.

(b) If the Contractor is permitted to use tools, equipment, or plant owned by the Company; they shall be maintained by him in first class condition while in his possession and shall be properly serviced upon their return to Company. The Contractor will be held responsible and shall reimburse the Company for any damage, mis-use or loss of any of the Company's tools, plant, or equipment used by him.

(c) Whenever the Company shall agree that it will, (1) furnish to the Contractor materials to be used by him for temporary construction purposes or for incorporation in permanent structures, (2) provide water, power, air, storage, office, or other facilities or conveniences for use by the Contractor, or (3) permit the Contractor to use the Company's tools, mechanical or electrical equipment or temporary or permanent structures erected by the Company or others, the Contractor shall inspect and determine to his own satisfaction, the safety, security, strength, and adequacy of such materials, structures, facilities, tools, and equipment, and shall assume all risk and responsibility in their use. The Contractor shall indemnify the Company against and hold it harmless from any and all loss and liability for injury, damage, or delay caused by or in any way arising out of the use by the Contractor of said materials, structures, facilities, tools, or equipment.

(d) Whenever the Company shall grant permission to the Contractor, his employees, subcontractors, or agents, to enter or occupy the Company's premises, including buildings and yards such permission shall be on condition that the Contractor assume all risks resulting therefrom.

(e) Whenever the Company shall furnish drawings showing details and methods of construction of temporary structures, such as coffer dams, buttresses, lagging, barricades, and other facilities to be constructed by the Contractor incidental to the work hereunder, such drawings shall be considered to represent minimum requirements only and the Company shall not be responsible for their adequacy or safety.

## 13. CHARACTER OF WORKMEN:

If any subcontractor to whom work is let by the Contractor, or any person employed by the Contractor or any of his subcontractors, shall fail or refuse to comply with any instructions which the Constructor may give pursuant to the provisions of Paragraph 11(a), or shall be deemed by the Constructor to be incompetent or to act in a disorderly manner, he shall be immediately removed from the job or with the Constructor's consent, transferred to other work on the job.

## 14. LAYING OUT WORK:

(a) The Contractor shall obtain at the site, all dimensions not shown on the drawings. He shall make a general check of all lines, dimensions and elevations, and shall make all necessary re-checks during the progress of the work to avoid errors in construction. Furthermore, he shall check each unit of work as it is completed in order to insure the proper installation of subsequent work. The entire responsibility for proper dimensions and fitting of all items of work for all trades being performed by him, shall rest with the Contractor.

(b) Should any discrepancy be found in lines, dimensions, or elevations, they shall be reported to the Constructor immediately.

## 15. SUBLETTING AND ASSIGNMENT:

(a) The award of subcontracts for work performed hereunder shall be subject to approval of the Constructor, and no subcontract will be recognized unless that part of the original contract which applies is made a part thereof. Such subcontracts shall in no wise relieve the Contractor or the sureties on his bond of liability under this contract. Nothing contained herein shall create any contractual relations between any subcontractor and the Company.

(b) The Contractor shall neither mortgage nor convey title to equipment or material to be used in this work, nor assign the work or any moneys payable under this contract, without the permission of the Company.

## 16. INFRINGEMENT PROTECTION:

(a) All royalties or other charges for patents for machinery, equipment, or materials furnished by Contractor for the work or for processes or arts employed by Contractor in said work, shall be considered as included in the contract price.

(b) The Contractor hereby agrees to indemnify and save harmless the Company against any and all judgments, costs, damages and expenses which may be awarded against the Company in any suit, action or proceeding brought against the Company for infringement or alleged infringement of any

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aforesaid patent, arising out of the use by the Company of the machinery, equipment or materials furnished by the Contractor hereunder in the ordinary course of their use for the purposes hereunder intended, or out of the processes or arts so employed by the Contractor. The Contractor further agrees that if any suit or suits for such infringement be instituted against the Company as above specified, and if promptly notified, the Contractor will assume the defense of such suit or suits and all expenses incident to the defense thereof; but it is expressly understood that in assuming the defense of such suit or suits the Contractor shall have control of same, and the Company shall be kept fully informed as to the progress thereof, and have the right to confer about and give advice and assistance regarding the same.

17. REPRESENTATIVE OF CONTRACTOR:

The Contractor shall maintain a responsible representative in charge of the work at all times during its progress to whom instructions may be given by the Constructor.

18. INSPECTIONS AND TESTS:

(a) ~~Field inspection and tests will be conducted by the Engineer under the supervision of the Constructor. The Contractor shall be responsible for the cost of such inspection and tests. The Contractor shall be responsible for the cost of such inspection and tests. The Contractor shall be responsible for the cost of such inspection and tests.~~  
(b) ~~All work shall be done under the inspection and supervision of the Constructor, or such assistants as he may assign, who shall have authority to reject work which in their opinion is unsatisfactory. Such work shall be remedied at the expense of the Contractor. The failure to reject defective work before estimates for payments are made shall not constitute acceptance of such defective work.~~

(c) ~~Field tests conducted by the Company shall be made at its own expense, except that the expense of the Contractor's representative, if any, shall be borne by the Contractor.~~  
(d) The Company shall be notified well in advance of the starting of the work, and the Company's inspectors shall have free access to the work at all times.

(e) The Contractor shall proceed to remove all rejected work from the site within twenty-four (24) hours after receiving written notice from the Constructor, to that effect. Upon his failure to do so after three (3) days' notice, the Constructor may proceed with its removal and charge the cost of substituting proper materials and workmanship to the Contractor, or may retain the work and arrange a fair deduction from the contract price to allow for the decrease in value.

19. INSURANCE AND INDEMNITY:

(a) The Contractor, at his own cost shall procure and maintain in full force and effect during the performance of the work contemplated hereunder, compensation insurance as issued by an insurance carrier acceptable to and approved by the Company, in amount adequately covering the Contractor's full liability for compensation to his employees or to such employees' dependents, as that liability is defined in Division IV of the Labor Code of the State of California and any and all amendments thereof or substitutions therefor. This provision will obviously not apply to work performed outside of the State of California.

(b) The Contractor shall (1) indemnify the Company from all liability for damages on account of injury to or death of persons or damage to property in any way occasioned by him, his agents, or employees, resulting from or arising out of or in any way connected with the performance of the work hereunder, and (2) reimburse the Company for all costs, expense and loss incurred by it in consequence of any claims, demands and causes of action which may be made or brought against it arising out of the performance of said work.

(c) Toward this end the Contractor shall furthermore procure and maintain in full force and effect during the performance of work contemplated hereunder, adequate public liability and property damage insurance to indemnify both himself and the Company for all liability for personal injury, death, or property damage that might be incurred by either in performing the work hereunder. Said insurance shall include, (1) a Contractor's Public Liability policy and, (2) a Contractual Liability policy or its equivalent, insuring the Contractor against risks assumed under this contract. Both policies shall carry property damage endorsements. They shall have limits not less than **300,000** . . . Dollars for damage to property as the result of one accident; not less than **100,000** . . . . . Dollars for personal injury to or death of one person as the result of one accident, and subject to that limit for each person, not less than **100,000** . . . . . Dollars for personal injury to or death of more than one person as a result of one accident.

(d) Upon request, policies covering insurance described hereunder shall be submitted for examination by the Company, who may require them to be revised in any respect considered necessary to provide full coverage of the Contractor's risks.

20. ADVERTISING MATTER:

No advertising matter of any kind will be allowed on any part of the work without the consent and approval of the Constructor.



## 21. CLEANING UP:

With respect to his own operations and responsibility therefor, the Contractor shall maintain the site and related structures and equipment in a clean, orderly condition at all times during progress of his work, and upon its completion he shall remove from the aforesaid property all rubbish and waste material resulting from his operations and shall leave same in clean, presentable condition. If Contractor fails to satisfactorily accomplish these requirements, Constructor may do so after 48 hours notice to Contractor of his intention, and Contractor shall reimburse Company for the cost thereof. The Constructor will be the referee in case of any dispute as to the extent of Contractor's responsibility or as to the ownership of rubbish.

## 22. EXTRA WORK AND CHANGES:

(a) The Company may make changes, without notice to sureties on the bond, provided the general purpose and extent of the work to be done under the contract is not altered. The Contractor shall undertake changes only upon written orders by the Constructor.

(b) The Company may order the Contractor to furnish additional work not provided for in the contract of a general nature similar to the work to be performed thereunder; may cause a reduction in the work; or may change the specific character of the work provided for in the specifications. All such shall be classed as extra work and will be ordered by the Company in the form of written "Extra Orders" or "Deduction Orders", in which the consideration shall be set forth.

(c) Unless otherwise provided, extra orders involving an increase in the work shall be executed at agreed prices. If prices cannot be agreed upon, or if the Company so directs, said extra orders shall be executed on the basis of actual direct cost of materials, labor and incidental expense as described herein, plus an agreed percentage thereof for the Contractors fee, plus State Sales Tax on materials furnished. Direct costs of labor shall include job foreman expense, Federal Old Age Benefits Tax, Workmen's Compensation Insurance, and State Unemployment Insurance Tax. Direct costs of materials shall be the actual sum paid for materials by the Contractor including transportation expense, but exclusive of State Sales Tax. Incidental direct expense shall include a pro-rata of premiums for the Contractor's bond, if any, and for such insurance as may be required by the Company in addition to insurance required in connection with labor. The percentage fee shall cover the Contractor's profit, superintendence, general overhead, and other general and indirect expense, including the use of all shop tools and equipment and the transportation and use of tools and equipment at the site when their value does not exceed \$25 each.

(d) For extra work performed by sub-contract, the sub-contractor shall be reimbursed on one of the bases specified under (c) above, and the Contractor shall be allowed a fee of 5% of the sub-contract amount to cover his own profit, overhead and other general expense.

(e) For extra work involving the use of mechanical equipment other than the type described under (c) above, such as trucks, cranes, pile drivers, excavators, the Contractor shall be reimbursed for their use at agreed rental prices during the time only when they are performing useful work as authorized. Said rental prices shall include the furnishing of all necessary power or fuel, lubricating oils and greases, rigging, maintenance, and repairs, but unless otherwise specifically agreed to, shall not include labor for operating purposes. For heavy equipment not self-propelled or readily moveable, extra expense for transportation to and from the site will be paid for at agreed prices in addition to rentals. Said rental prices shall determine the complete payment for equipment furnished, including profit, indirect overhead, and all other general expenses.

(f) Extra Orders may also be used to authorize changes in types of equipment or materials which do not involve additional expense for installation, price adjustments to be mutually agreed upon between the Company and the Contractor.

(g) Contractor's invoice for extra work, unless performed at an agreed price, shall be supported by labor payroll and itemized bills of material verified by records acceptable to the Constructor. No payment will be made for extra work which is not authorized by Extra Order, which is necessary to replace or repair defective work, or which, in the opinion of the Constructor, is not reasonably necessary to the performance of authorized work.

(h) Deduction Orders involving a reduction in work, shall be credited to the Company on the basis of unit contract prices for such work or at amounts to be agreed upon between the Contractor and the Constructor.

(i) Payments on Extra Orders will be made in the same manner as provided for contract work under Paragraph 26.

## 23. CLAIMS AND LIENS:

(a) If the Contractor claims compensation for injuries caused by the Company, he shall submit a detailed written statement of such injuries and the amount of damages claimed, to the Constructor within one week of the time thereof, and unless such statement shall have been so filed, his claim for compensation shall be deemed to have been waived. Neither damages nor extras will be allowed the Contractor for unforeseen difficulties or obstructions.

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(b) In case of default by the Contractor in making prompt payments to his employees, materialmen or subcontractors for work performed or material furnished hereunder, the Company may retain from any installments due the Contractor, sufficient sums to pay the amount in default. The Contractor shall reimburse the Company for all such money paid by it for liens or claims against the Contractor.

## 24. TERMINATION OF CONTRACT:

(a) If the Contractor fails to begin the work within five days after notice to commence, or to carry out the provisions of the contract, he shall be given a three (3) days' written notice to that effect. Upon his further failure to conform to the time requirements or other provisions of the contract, the Company may take over and do all or part of the work, may use the Contractor's equipment and facilities at the site to complete the work and may, at its option, terminate all or part of the contract. The Contractor and his sureties shall be liable for the additional cost arising from his failure to complete the work as agreed upon, as well as for the consequential damages to the Company. The Contractor shall be the sole judge as to whether there has been such non-compliance with the contract as to warrant its termination or its completion without such termination, subject to damages.

(b) In the event that the Company terminates the contract for cause, it will give written notice of its intent to the Contractor who shall vacate the site of the work within 10 days after service of said notice upon him. The Contractor, however, shall not remove any material, plant, or equipment from the site of the work without the approval of the Company.

(c) The surety on the Contractor's bond shall not be entitled to complete the work or deliveries without the written consent of the Company.

## 25. BOND:

Unless waived by the Company, the Contractor, within five days after the signing of the contract, shall furnish the Company with a Bond of the form attached hereto in the amount of 100 per cent of the contract price with an acceptable Surety Company of the State of California. Any change in work or time provisions with or without notice, or consent of the surety, shall not release the surety on the bond, provided the intent of the contract is not altered thereby.

## 26. PAYMENTS:

(a) Payments shall be made only upon the certificate of the Constructor. Prior to the issuance of the certificate for final payment, the Contractor, when requested, shall furnish evidence satisfactory to the Constructor that all claims for labor and materials have been paid, and if no claim shall have been presented to the Company by any person, based upon any act or omission of the Contractor, and no liens or claims shall have been filed or made against said work or property whereon it was done, or against the Company, the Company shall pay to the Contractor all sums retained as provided by the terms of the agreement, less deductions for injury, loss or damage which may have been sustained by an act or omission of the Contractor. If laborers, material dealers or other persons make claims against the Company by reason of any act or omission of the Contractor, the Company may pay said claims from the sums retained. Such payment shall be deemed and treated as though made directly to the Contractor. The acceptance by the Contractor of final payment hereunder shall operate as a release of the Company from all further claims of the Contractor.

(b) The Contractor shall render all invoices in triplicate for payment when due. These shall be forwarded to the Pacific Gas and Electric Company, Engineer of General Construction, 245 Market Street, San Francisco, California.

## 27. NOTICE OF COMPLETION:

As soon as the improvement as a whole, of which the work hereunder is a part, has been completed to the satisfaction of the Constructor, the Company will make and file a notice of completion of the work under this contract, pursuant to Section 1187, of the Code of Civil Procedure of the State of California, if applicable.

## 28. GUARANTEES:

(a) In addition to any or all guarantees mentioned in the Specific Conditions, the Contractor shall guarantee to leave the entire installation in satisfactory working order and free from all defects in material, workmanship and finish. He shall guarantee to repair or replace at his own expense any part of his own work that may develop any defects due to faulty material or workmanship within a period of one year after the work is accepted. He shall also guarantee to make good any equipment installed or any work done by others and other work done by himself which was damaged as a result of any such defective apparatus, materials or workmanship.

(b) The signing of the contract for the work covered by these specifications and of which they are a part shall constitute an agreement by the Contractor that the guarantees mentioned above and any or all guarantees mentioned in the Specific Conditions are thereby made effective and binding upon him.



29. SAFETY PRECAUTIONS, PROTECTION OF PROPERTY AND RESPONSIBILITY FOR DAMAGE

(a) The Contractor shall conduct his work in a careful and prudent manner so as to safeguard adequately the public, his own, and other workmen from personal injury and the property of Company and others from damage. Insofar as practicable, all construction activities shall be confined within the public or private R/W and Contractor's operations shall be so conducted that a minimum of inconvenience will be caused to the public, and to owners and tenants of property affected by the construction work. Contractor shall cooperate with Constructor in satisfying all reasonable requirements of property owners.

(b) The Contractor is cautioned to give special attention to the elimination of hazardous situations that may be unsafe for others as well as for his own workmen or that may result in inefficient working conditions. The Contractor shall conform to accepted good housekeeping practices at all times and shall take all precautions required by applicable safety regulations of the California State Department of Industrial Relations, Division of Industrial Safety and other state or municipal authorities.

(c) The Contractor's attention is directed to the danger of fire. The greater portion of the pipe line right of way runs through or near dry grass, brush, and woods from which fire could spread to adjacent homes and other structures. All exhaust pipes shall be equipped with spark arrestors. Smoking shall be prohibited in grass and brush areas and the Contractor shall be particularly careful in cutting and welding that sparks or hot electrodes do not fall in inflammable material. In stockpiling or lining up pipe preparatory to welding, all grass, weeds and other inflammable materials shall be cleared off over an area of sufficient size to reduce the hazard of fire. The Constructor shall provide barrels or other suitable containers filled with water, at such locations as are necessary for fire control purposes. Where welding is in progress there shall be available within arms reach of welder or his helper, fire fighting equipment such as wet burlap sacks and pack pumps. The Contractor shall also provide at the site of welding operations and the wrapping operations, fire patrol cars equipped with high pressure pumps, 100 gallon minimum water supply, and fog nozzles. All refuse shall be cleaned up progressively with the pipe line construction. Contractor shall comply with all requirements of the California State laws applicable to fire prevention and with particular reference to burning and use of explosives.. (State Division of Forestry publication "Forest and Fire Laws").

(d) The Contractor shall maintain in effect, so long as necessary, sufficient lanterns, or flares, barricades, bridges, warning signs, and other safeguards as necessary to comply with requirements of this paragraph 29. The Contractor's attention is directed to pedestrian, auto, truck and rail traffic which will be encountered during the construction of portions of the 30", 24", and 20" pipe lines. He shall provide watchmans service to the extent necessary for protection of the work and of any Company property that is in his charge.

(e) At all times during the performance of this Contract, the Contractor shall exercise due care and necessary precautions to prevent damage to property of the Company and others resulting from the Contractor's operations hereunder. The Contractor shall properly use, safeguard, and care for any materials, tools, equipment and supplies that are furnished to him by the Company, subsequent to their delivery to him and while such are in his charge. In this connection all pipe and other

materials that are furnished to the Contractor by Company shall be deemed to be in the Contractor's charge from date of receipt until completion and acceptance of the work hereunder. The Contractor shall properly safeguard all work performed by him until its completion and final acceptance.

(f) The Contractor shall promptly repair, replace or otherwise make good, at his own expense, any loss of or damage to any property, including that of Company resulting from his performance of this Contract for which liability is imposed on him by law and for which he shall assume responsibility in accordance with provisions of these specifications. Contractor's responsibility shall include loss or damage resulting from Contractor's failure to comply with requirements of the specifications or from any improper or defective work performed by Contractor and any loss or damage that Contractor must necessarily cause with intent in performing the work, except that Contractor will not be held responsible for any damage which he must necessarily cause to crops, within a 35 ft. wide construction strip in which the 15 ft. pipe line right of way lies.

(g) When Contractor's internal combustion engine powered equipment is working in or about grain, hay, brush or grazing lands, said equipment shall be equipped with such fire protective devices as are prescribed therefor by State Law and county ordinances. In particular Contractor shall equip said equipment with spark arrestors as required by the State Health and Safety Code section 13005, and any exhaust pipes that may come in contact with dry grass shall be covered with insulating material.

(h) To enforce the intent of these specifications, The Constructor may require the Contractor to install additional safeguards and observe such special safety precautions as appear to be necessary. Special instructions given by the Constructor shall not constitute a waiver of the Contractor's responsibility to take all safety precautions necessary to conform to the requirements of the foregoing governmental authorities or to maintain safe and efficient working conditions.

(i) Contractor shall satisfactorily adjust all damage claims within a reasonable period. Company may withhold from the final payment due hereunder the reasonable value of any claim against it which Contractor has failed to settle.

### 30. RIGHTS OF WAY ROADS, FENCES AND CONSTRUCTION FACILITIES

(a) Approximately 90% of the line lies in private R/W purchased by the Company. The remaining 10% is located in public thoroughfares. The private R/W will average approximately 15 ft. in width. Company will make the necessary arrangements and will permit Contractor to utilize for construction purposes, a strip 35 ft. in width within which lies the 15 ft. pipe line R/W. Where pipeline lies in street R/W, Company will obtain the necessary permits from Municipal and County authorities and other agencies having jurisdiction.

(b) Contractor shall arrange with owners for the use of any private roads and lanes or other means of ingress and egress through private property; provided however, that any use of private property and the arrangements made therefor by Contractor shall be subject to approval of the Constructor. Such approval, however, shall not relieve Contractor of any obligations to said owners or of responsibility for any damage caused to such property by Contractor.

(c) Wherever practicable, existing roads and lanes to and from the pipe line right of way shall be used by Contractor. If not practicable to use existing roads and lanes the route of routes convenient to the Contractor and at the same time occasioning the least inconvenience to property owners shall be used. Contractor shall construct and maintain all temporary roadways necessary to permit ready access to and along the pipe line right of way and as otherwise necessary for performance of the work hereunder. He shall properly maintain all private roads, lanes or walkways, including bridges, culverts, fences and other structures related thereto, that are used by Contractor in his operations hereunder. Upon completion of the construction work, Contractor shall promptly restore ground surfaces of temporary roads to the original conditions as required by owner.

(d) Contractor shall properly maintain any existing fences along the pipe line right of way or any other fences that are interfered with by him, shall construct any necessary temporary or permanent gates and gate posts to permit passage through said fences and shall replace any portions of fences which must be removed by him.

(e) Contractor shall construct, maintain and subsequently remove, all temporary construction facilities that are necessary for performance of the work hereunder; said facilities shall include any culverts, flumes or other structures at drainage ditches, creeks or other waterways crossing the pipe line right of way as are necessary to prevent water from entering pipe line trenches or pits on either side of such crossing or to prevent damage to adjacent property and interference with water supply to such property.

(f) Contractor shall provide, install and maintain bridges of sufficient size and strength at all driveways, walkways, street intersections to permit passage of train, auto, truck and pedestrian traffic. Contractor will be responsible for all damages or injuries sustained due to negligence on his part in this respect. Contractor will perform work in such manner that the spoil and equipment will not obstruct traffic movements in streets, intersections, or driveways.

(g) Where necessary to grade or excavate on public or private property, Contractor shall subsequently restore the ground surface to original grade and condition.

(h) Contractor shall provide adequate facilities in the vicinity of the job site for field headquarters and shall provide such warehousing or protected storage facilities as are necessary for the work.

### 31. TRESPASS

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Please Note*  
The Contractor shall not allow his subcontractors, agents, or his or their employees to trespass on premises or lands in the vicinity of the work, nor to pick fruit, berries, or other produce or commit any nuisance or act of vandalism thereon. No private automobiles of Contractor's employees will be permitted on the pipe line right of way or on private property.

### 32. WATER

The Contractor shall provide all water required for his purposes. Where water is not readily available along or adjacent to the pipe line right of way, the Contractor shall provide water in barrels, tanks, or other suitable containers.

### 33. SANITATION

The Contractor shall comply with all regulations regarding sanitation, as imposed by Federal, State, municipal, county or other governmental authority.



SPECIFIC CONDITIONS1. WORK TO BE PERFORMED

(a) The work to be performed hereunder comprises the construction of approximately 18 miles of 30" O.D., 1.6 miles of 24" O.D. and 2.1 miles of 20" O.D. high pressure natural gas transmission mains as an extension of Company's existing Main 132 and as links between Mains 132, 109, and 101. Said work shall include:

(1) Installation of approximately 95,000 ft. of 30" O.D. gas transmission main from the present northern terminus of Main 132, at the junction of Canada and Belmont Roads in San Mateo County, north, generally paralleling Main 109, to Company's Martin Substation. Pipe in that section of the right of way extending from Hillside Drive to Visitacion Valley, approximately 6,600 ft., will be shop primed but not wrapped.

(2) Installation of approximately 8,000 ft. of 24" O.D. and 9,500 ft. of 20" O.D. wrapped gas transmission main, (Main 147) east from existing Mains 132 and 109 at Whipple Road, near Canada Rd., to and along Brittan Ave., San Carlos, and tie to the existing Main 101 near Brittan Ave. and the El Camino Real.

(3) Installation of approximately 1,500 ft. of 20" O.D. wrapped gas transmission main as a link between the proposed Main 132 and the existing Main 101 in Martin Substation yard at Geneva and Schwerin Streets.

(4) Installation of approximately 8 blowoffs at locations designated by Constructor, in accordance with Drawing 181011.

(5) All excavation preliminary to tie-ins to Company's existing mains, and backfilling subsequent to tie-ins but excluding actual hot tie-ins which will be performed by Company. Such tie-ins will be located at the following approximate locations: Belmont and Canada Roads; Martin Station (3); Whipple Road Valve Pits; El Camino and Brittan Avenue.

(6) All breaking of pavement required and replacement of pavement, as set forth in paragraph 21 and the proposal, at the option of the Company.

(b) Construction shall comprise loading pipe and material, hauling, stringing along the right of way, breaking pavement, clearing and grading the right of way, ditching, welding of pipe, installing bends or making angles, applying protective coating to all field joints and angles, installing valves and fittings, lowering, testing, cleaning up the right of way, replacing pavement and doing all work necessary to make a complete and working installation in accordance with these specifications and drawings.

(c) Contractor shall furnish all labor, tools, fully operated equipment, and facilities required to perform this work in compliance with these specifications and drawings. Contractor shall furnish all materials for said work except such materials as are specified under paragraph 3 which will be furnished by Company.

## 2. WORK NOT TO BE PERFORMED

(a) Furnishing of those materials which are specified under paragraph 3 to be furnished by Company.

(b) Wrapping of pipe except as hereinafter specified for weld ells, field joints, patching and such other fittings as are to be buried.

(c) All connections to any existing gas pipe lines, however Contractor shall do all preliminary excavation and shall wrap the bare pipe and backfill the excavations subsequent to tie-ins by Company.

(d) Meter sets, regulator and valve installations except blowoffs as specified under paragraph 1 (a) (4).

## 3. MATERIALS

(a) Company will furnish free to Contractor at specified delivery points all items of materials as are specified herein and called for on the drawings that are required to be incorporated in or to become a permanent part of the aforesaid sections of gas pipe line, its accessories and appurtenant structures to be constructed hereunder. Company will not furnish any materials for construction or maintenance of fences, gates, roadways, shoring, lagging, flumes, culverts, bridges, walkways, skids, blocking, barricades, and the like, including nails and rough hardware for same. Company will not furnish any backfill or paving materials.

(b) The items of materials to be furnished by Company for all sections of gas pipe line will include the following:

(1) Transmission pipe, which will be furnished for main and cross tie lines in sizes and of types as specified under paragraph 1 of Instructions and Information to Bidders. The transmission pipe will be furnished, wrapped in the following lengths: 30" - 30,000' in 60' lengths, 65,000' in 30' lengths of which 6,600 ft. will be bare; 24" in 40' lengths; and 20" in 40' lengths.

(2) 90° welding elbows for all changes in alignment and grade of more than 20°. Ells are to be cut to form the required deflection. Ells will be furnished bare and with plain ends beveled for welding. Contractor is referred to paragraphs 9 and 10 regarding the use of these fittings.

(3) Welding electrodes in the following sizes and types:

- a. 5/32" Fleetweld No. 5 for stringer beads inside welds, and tacking.
- b. 3/16" Fleetweld No. 5 for succeeding passes on 24" and 20" mains.
- c. 3/16" Shield-Arc No. 85 for succeeding passes on 30" mains.

(4) All necessary protective wrapping and coating materials required to be applied by Contractor on field joints in transmission and auxiliary pipe and fittings where buried.

(5) All casing, pipe, fittings and other materials required for railroad and highway crossings as shown on Drawing 281050 and all valves, pipe, fittings and other materials required for blowoff installations, as shown on Drawing 181011. Casing pipe will be furnished in approximately 28 ft. lengths and will require priming with Fabco #3972 but will not require wrapping. Small diameter pipe for line accessories will be furnished in standard lengths and that required to be buried will be furnished wrapped.

(6) All other auxiliary piping, valves, fittings and accessories as called for on drawings.

(c) The 30" O.D. pipe will be available to Contractor in stockpiles at pipe wrapping plant in the Bechtel Corp. yard at Watson, California. The 24" and 20" pipe is located at Company's pipe yard on the Santa Clara-Alviso Highway at Kifer Road, 0.6 mile west of the Bayshore Highway near Santa Clara. Company may at its option load and haul all or a portion of the pipe to the job right of way, or where the right of way is inaccessible to hauling trucks, Company will deliver pipe to the closest accessible point where Contractor shall receive and distribute it.

(d) All other materials, to be supplied by Company, will be available to Contractor at Company's Martin Substation, Geneva Avenue and Schwerin Street.

(e) Contractor shall check all materials delivered to him by Company against an inventory thereof, which will be presented to him by Constructor at the time of delivery. Contractor shall satisfy himself as to the condition of the materials when delivered, and shall sign a copy of said inventory, indicating his receipt in good condition of the materials listed, if such is the case. Contractor will be held responsible for said materials after they are delivered to him, and shall reimburse Company for the value of any that become lost or that are destroyed, damaged, wasted, or that are misused by him. Any of the materials furnished by Company that are not used in the work shall be returned to Company, at Martin Station, in good condition, upon completion of the Contract.

#### 4. RECEIVING, HANDLING AND TRANSPORTING PIPE AND MATERIALS

(a) Contractor shall load, haul, unload and distribute at the job location all materials except as set forth hereinafter. Materials will be available to Contractor at the locations specified in paragraph 3 foregoing. Contractor shall employ for said hauling a licensed hauling contractor or contractors meeting the Constructor's approval. Company may at its option load and haul all or a portion of the pipe to job site. Should Company at its option load and haul the pipe to the job, Contractor shall be required to unload and string the pipe along the right of way and shall be allowed one hour free time for each truck load of pipe. This free hour includes time for unloading the pipe and stand-by time for pipe truck, if any. Any charges made by the pipe hauler for stand-by or unloading time over and above the one hour free time shall be paid by Contractor.



(b) 30,000 ft. of the 30" pipe will be furnished in 60 ft. sections. The lengths were planned for the section of the line north of San Mateo Creek to San Andreas meter set and that section between Junipero Serra Blvd. and Hillside Road. The actual location and distribution of the 60 ft. lengths will be left to the option of the Contractor.

(c) The Contractor is referred to paragraph 29 of the General Conditions regarding his responsibility for the care of pipe and other materials furnished by the Company. The Contractor accordingly shall exercise care in handling pipe and accessories to avoid damage to the pipe coating and to avoid stressing the pipe beyond its safe working stress.

(d) Pipe shall be handled only by lifting from the ground or supports in a manner approved by Constructor. In no case shall it be dropped on the ground or supports, or either dragged or rolled thereon in a manner that will damage the coating or wrapping. Suitable temporary blocking shall be placed as necessary for the proper support of pipe and to prevent its rolling. Such blocking shall be padded as necessary to prevent injury to wrapping and coatings.

(e) Adequate blocking and padding shall be used in vehicles to provide a firm bed for the pipe and to successfully prevent abrasion and other damage to the pipe covering while the pipe is in transit. Padding, blocking and other such devices shall be subject to review by the Constructor who may require modifications to be made if he considers them necessary. Such review, however, shall not relieve the Contractor of any responsibility for damage to the pipe and its coating while in his care. In unloading and distributing the pipe, suitable blocks and padding shall be furnished and placed by Contractor when temperature conditions are such as to make it necessary to protect the pipe covering; also at any other time when considered necessary by the Constructor.

##### 5. CLEARING OF RIGHT OF WAY AND CONSTRUCTION AREAS

(a) Contractor shall clear pipe line right of way and construction areas within limits hereinafter defined, to a width and extent sufficient to meet all essential requirements for the safe and efficient performance of the work hereunder. He shall clear off all weeds, debris, dry growth and other inflammable material to the extent necessary to reduce the hazard of fire. Said construction areas shall be confined to limits of a strip, 35 ft. in width, which shall include the 15 foot right of way. Contractor shall not damage or remove any trees, or unnecessarily cause damage to crops or structures, within said construction areas. In no event whatsoever shall the group of four oak trees standing near the southerly terminal of the 24" or 20" gas main on the Ella Cook McNutt property be molested or interfered with in any manner. Contractor shall dispose of all refuse resulting from clearing, in a suitable manner as approved by Constructor. Upon completion of the work, Contractor shall do whatever grading and leveling is necessary to restore the right of way to its original contours.

(b) Reference and alignment survey stakes will be set by Company. Any that are disturbed or removed by Contractor shall be replaced by Contractor at his expense.

(c) Where the pipe line right of way is located in public thoroughfares, the existing underground structures such as telephone cables, duct lines, electric signal systems, sewers, gas mains and water pipe lines that are known to the Company, which cross or are in the immediate vicinity of alignment of the gas pipe line to be installed, are indicated on attached drawings. While the foregoing information is to be the best of Company's knowledge, substantially correct, Company does not assume any responsibility in connection therewith. Accordingly, Contractor shall not make any claims against Company nor shall he be entitled to any compensation by Company over and above the contract consideration for any damages suffered by him by reason of any inaccuracies in the information shown on the drawings or specifications, or any data concerning any existing structures, pipe or duct lines or other appurtenances or conditions that may be encountered, either above or below ground.

(d) The Contractor shall locate and expose by excavating test holes, all substructures within proposed trench line prior to trenching with equipment. If conditions are revealed by the test hole or holes that rerouting of trench is necessary, the exact location shall be determined by the Constructor at the time of construction. Contractor shall not claim reimbursement for additional expense for rerouting his trench or for any reconstruction of work already installed due to encountering obstructions where such additional expense was brought about by failure to excavate test holes.

#### 6. EXCAVATION

(a) Trenches for the pipe line and appurtenances shall be excavated in the pipe line right of way on alignments and at locations established by survey stakes set by Company. The Constructor will designate in advance of trenching the center line of the gas pipe line right of way. The work shall be performed in such manner and by such means as will accomplish the purpose without undue damage to property. Contractor shall be particularly careful in excavating to avoid damage to surface and substructures, including existing piping and conduit and shall be responsible for any damage thereto. He shall not interfere with any structures of the Company or others without first securing permission of the party or parties concerned.

(b) Pits for blowoff valves and other accessories and appurtenances shall be excavated to depths and dimensions as will permit installations in accordance with requirements shown on the drawings. The width of trench shall be at least 10" greater than the outside diameter of the pipe to be installed therein. Contractor shall excavate trench so that a minimum of 3" clearance is obtained between the gas line and any existing substructures.

(c) All stumps and roots encountered in the trench shall be cut back for the full width of the trench so that in no instance shall they come in contact with the pipe. No chips or parts of stumps shall be left in trench. The trench shall be kept free of welding rods and other foreign materials.

(d) All gas pipe lines hereunder shall be installed underground except for spans at creek or canyon crossings designated by Constructor to be exposed. At railroad and highway crossings, the pipe lines shall be installed in casing which shall be jacked under the roadbeds at minimum depths as shown on Drawing 281050.

Where not otherwise shown on drawings, the depth of trench shall be such as will permit installation of the pipe in accordance with these specifications and so as to provide minimum depths of cover over the pipe as follows:

	<u>Depth of Cover</u> <u>Minimum</u>
(1) In beds of creeks and drainage ditches and canals (except as otherwise governed by drawings).	<u>30"</u>
(2) In ground other than rock and except at county and private road crossings.	<u>30"</u>
(3) In rock, except at county and private road crossings.	<u>24"</u>
(4) At county and private road crossings.	As required by agency having jurisdiction.

Note: In addition to the foregoing requirements, the depth of trench in rock shall be such as will permit a 6" cushion of selected backfill to be placed under the pipe. Also, wherever the pipe lines to be constructed hereunder cross any existing pipe lines, the depth of trench shall be governed by the requirements shown in the drawings. For any condition not covered by the drawings, allowance shall be made for a minimum vertical clearance of 3" between the pipe lines.

(e) Contractor will be required without additional charge to excavate to a depth of 72" for limited distances. The minimum depth of trench shall be 60" for 30", 54" for 24", and 50" for 20" pipe. Should a depth of trench greater than 72" be required by Company, Contractor shall be reimbursed as set forth under item 4 of the proposal. Payment shall be based on cubic yards in place prior to removal and shall be computed as set forth hereinafter. The depth of the trench shall be determined as the distance between the top of the pipe and the surface of the street, sidewalk, or ground surface, measured at the lower side of the trench, plus the pipe diameter. The width of trench for determining the price for extra depth shall be the diameter of the pipe plus 10".

(f) Contractor shall prospect or otherwise locate and protect all surface and subsurface structures on the right of way prior to commencing trenching. He shall be responsible for all damages to structures and property of the Company and others due to his operations, and he shall repair any damage or satisfy claims for damage at his own expense. Such structures include sewers, gas, and water pipe lines, electric and telephone ducts, signal systems, the footings for pole lines, steel towers for electric power transmission and the like. In no event shall any machine excavation be allowed within five (5) ft. of a telephone cable or duct line.

(g) Shoring and trench bracing, where necessary, shall be furnished and installed by the Contractor. He shall keep the trench in good condition and no claim for extra work will be allowed by reason of caving of the trench.



(h) In the event of any damage to utilities of any nature whatsoever, he shall report immediately by phone to owner involved. He shall then make a complete written report of time and date of accident, including the name and address of the person to whom the phone report was made, and submit to Company's representative.

(i) The Contractor shall break out and remove from the site such pavement as may be required for the performance of all work hereunder. He shall confine the width of cut to 42" for 30" pipe, 36" for 24" pipe, and 32" for 20" pipe unless otherwise authorized by the Constructor. The broken edges shall be clean-cut and follow the alignment of the pipe line.

## 7. USE OF EXPLOSIVES

(a) Where blasting is required, Contractor shall take all precautions to prevent damage or injury to persons or property. Contractor shall employ for this work only competent powder men thoroughly experienced in this type of work. Such employees must meet the requirements of the Constructor as set forth above and shall do no work with explosives on the job until such approval is obtained. All work with explosives shall be subject to all State, County, and Municipal requirements and Contractor shall obtain such permits as may be required.

(b) Blasting mats shall be used to cover all shots. Such mats shall be constructed of timbers not less than 6"x6" and of sufficient length to extend two (2) feet on each side of the trench and not less than 3 feet axially on each side of the charge. The timbers shall be fastened together with wire rope or rods in such a manner that loose rock and debris are confined to the immediate area and are not scattered over the right of way and adjacent fields.

(c) Blasting within 50 feet of overhead lines, tower foundations, or power poles will be limited to powder charges not to exceed one (1) stick of 40% 1-1/8"x8" extra dynamite loaded in the bottom of the hole. Holes shall be a minimum of 51" in depth along the center line of the trench and shall be not less than 18" apart. When powder has been well tamped in the bottom of the hole, the hole shall be tightly stemmed with a suitable material to the collar of the hole.

## 8. LINING OF PIPE

(a) Each section of pipe shall be lined up on skids with the preceding section. The joints must be so lined that the abutting of the pipe will be concentric and a uniform distance apart throughout the entire circumference. For this purpose Contractor shall provide and use a power driven internal line-up clamp, equipped with spacers of a type approved by Constructor. The spacing between the ends of the pipe shall be not less than 1/16" nor more than 1/8". Contractor shall bear in mind that the proper line-up of abutting ends of the pipe is a prime factor in the production of satisfactory welds.

(b) Skids shall be of adequate size and so spaced as to properly support each section of pipe. In no case shall any welded section of pipe be unsupported over a space greater than 80 ft. nor shall a section of more than 50 feet be allowed to overhang a support. Skids or other supports shall be padded with sacks of sawdust or earth or other suitable material to prevent injury to the wrapping or coating. If wrapping or coating has been injured, it shall be repaired at Contractor's expense, prior to lowering the pipe in the trench.

(c) Where the pipe used is of the electric welded longitudinal seam weld type, pipe shall be lined up so that the longitudinal welds on the abutting lengths are staggered. The welds shall be so placed as to be in the top quadrant of the installed sections and not less than 6" of the arc apart.

9. ANGLES 30" PIPE LINE

(a) The angles in the pipe line of 20° or greater will be made using portions of 90° weld ells having a center line radius of 30". The Company will furnish a stock of 30", 90° welding ells which Contractor shall machine out with an oxy-acetylene cutting machine to the required angularity, care being taken that all cuts are made radially. Angle shall be cut straight (cutting tip perpendicular to surface of metal) then beveled for welding. Bevels shall be 30° with a 1/16" shoulder.

(b) For angles in the pipe line less than 20° mitered angle welds shall be made. All miters will be oxy-acetylene machine cut and then beveled for welding. Angles 6° to 20° will be fabricated by mitering one half ( $\frac{1}{2}$ ) of the angularity on each pipe section. For angular deflections upto and including 5°, a single miter on one section of pipe will be allowed but care must be taken in aligning the abutting ends so the increase in the major diameter of the mitered end is equally distributed at the throat and apex of the resultant angle. All mitered angles shall be welded inside and out.

(c) After the abutting ends of the miter joint have been cut and beveled, Contractor shall use a power grinder on the beveled ends to insure exact fit and to remove any oxides or scale left from the cutting and not removed by the "chipping" operation.

(d) The use of an approved bending machine will be allowed in making angular deflections up to 20° subject to the provisions of paragraph 10 (c) following.

10. ANGLES 24" AND 20" PIPE LINE

(a) The angles in the 20" and 24" pipe line greater than 20° will be made using portions of 90° weld ells having a center line radius of 30" and 36" respectively. The Company will furnish a stock of 20" and 24", 90° welding ells, which Contractor shall machine cut with an oxy-acetylene cutting machine, to the required angularity, care being taken that all cuts are made radially and the ends properly beveled for welding.

(b) For angles in the pipe line of 20° or less, mitered welds shall be made. All miters will be oxy-acetylene machine cut and then beveled. Care shall be taken in cutting and fitting up the miter. Angles of 6° to 20° will be fabricated by mitering one half ( $\frac{1}{2}$ ) of the angularity on each pipe section. For angles up to and including 5°, the mitering of a single joint will be allowed but care must be taken in aligning the abutting ends so the increase in the major diameter of the mitered end is equally distributed at the throat and apex of the resultant angle. All mitered angles shall be welded inside and out.

(c) After the abutting ends of the miter joint have been cut and beveled, Contractor shall use a power grinder on the beveled ends to insure exact fit and to remove any oxides or scale left from the cutting and not removed by the "chipping" operation.

(d) In lieu of angle bends and/or mitered welds, the pipe may be cold bent, in the field, up to a maximum angular deflection of 20°, as required to make the necessary deflections, provided the bending machine is of a type approved by the Constructor and will not collapse or otherwise damage the pipe. Any damage to the pipe or protective wrapping and coating shall be repaired to the satisfaction of the Constructor, and the Contractor shall bear all expenses thereof.

# 11. CLEANING OF PIPE BEFORE WELDING

(a) Prior to welding all dirt, rust, scale, grease, or other substance detrimental to welding shall be removed from the beveled ends of the pipe to be welded. The method employed in cleaning the joint must be approved by Constructor before the actual welding operation is performed. Hand wire brushing alone will not suffice.

(b) Before the lengths of pipe are tack welded together, all loose rust, debris, and dirt shall be removed from the inside of the pipe. Line-up foreman shall visually inspect the inside of each pipe section before the tack weld is made to insure compliance with this requirement.

# 12. WELDING

(a) All field joints of transmission pipe line shall be arc welded. Fittings and accessories shall be welded where called for on drawings. The Contractor shall employ only competent, electric arc welders, thoroughly experienced in pipe line welding. He shall provide all necessary welding equipment of suitable type for the work. The Company will furnish the welding electrodes to Contractor for the work hereunder, of the sizes specified under paragraph 3 hereof. The Contractor shall, at all times, use the proper amount of current for the size electrode being used. Welding machines shall be equipped with voltmeters and ammeters, which shall be maintained in proper working conditions.

(b) All welding shall be done employing the "stove pipe" method. Tack welds and first beads shall be applied with 5/32" Fleetweld No. 5 electrodes and shall thoroughly penetrate to the inner surface of the pipe and shall be free from pinholes. On 30" pipe two welders shall place the stringer pass, one on each side of the joint. The inside pass on miter joints shall be applied with 5/32" Fleetweld No. 5 electrodes.

(c) Position and tie-welds of butt joints shall be made in not less than 3 passes. In all cases a sufficient number of passes shall be made as may be necessary to completely fill the root and throat of butt welds and to provide a convex reinforcing. The root of tack welds and the root of the first bead shall in all cases be made with electrodes not larger than 5/32" diameter. Succeeding beads on the 24" and 20" shall be made with Fleetweld No. 5 electrodes not greater than 3/16" diameter. On the 30" pipe all passes subsequent to the stringer bead shall be made with 3/16" diameter Shield Arc No. 85.

(d) The faces of all welds shall be convex with a reinforcing such that the overall weld thickness is at least greater than the plate thickness. No valleys or undercutting of the welds will be acceptable. All tacks and beads shall be thoroughly cleaned of scale and oxides prior to application of each succeeding bead by using a hammer type scaling tool followed by thorough brushing with a steel brush. The method and extent of cleaning tacks and beads shall be approved by the Constructor. Welds shall not be caulked or tampered with in any way without permission of the Constructor. Should this be done, such welds will be condemned whether or not they leak, and shall be replaced by the Contractor at his expense.



X (e) Each welder will be assigned a number and this number must be stamped with a steel number punch on each weld by the welder for purposes of future identification. The welders making the stringer bead shall in all cases place their mark on the north or San Francisco side of the weld while the marks for the succeeding passes shall be on the south side. In all cases the marks shall be in the top quadrant of the pipe and within 2" of the longitudinal seam.

X (f) Welding shall not be done when, in the Constructor's opinion, the weather is unfit therefor. Ends of completed pipe sections shall be closed by the Contractor by means of approved tightly fitting plug, bulkhead or cap which will keep materials and water out of the pipe. Stuffing the ends with rags or sacks will not be permitted, and will be considered cause for discharge of the employee at fault.

### 13. TESTING OF WELDS

(a) At any time during the progress of this contract the Company may require the Contractor to cut out, and deliver promptly to the Company engineer or inspector, complete welds from any joint in the pipe line which the Company engineer or inspector may designate. Coupons shall be cut from each test weld, as directed, and may at Company's option be tested in any one or all three of the following: (1) for ductility, by the free bend test, (2) for porosity and penetration, by the nick break test, and (3) for tensile strength.

(b) It is the intent of these specifications to produce welds which will develop the full tensile strength of the pipe metal. In this respect the tensile test will be considered satisfactory if the coupon or coupons break in the parent metal or if in the weld metal at stress of 72,000 p.s.i. or greater. The reinforcement on the weld will be left in place during the tests.

(c) For the guided bend test the coupon will be bent around a standard  $3/4$ " radius die to  $180^\circ$  with the inside of the pipe on the outside of the bend. The specimen will be considered passing when (1) no crack or other open defect exceeding  $1/8$ " measured in any direction is present in the weld metal or between the weld and the parent metal after bending, (2) the specimen cracks or fractures and the fractured surface shows complete penetration through the entire thickness of the weld with an absence of slag inclusions exceeding  $1/16$ " in greatest dimension or when the sum of the greatest dimensions of all such defects within any square inch of weld does not exceed  $3/8$ ". When necessary the specimen shall be broken apart to permit examination of the fracture. A specimen must bend at least  $90^\circ$  before evidence of any fracture is apparent.

(d) Coupons for the nick break test shall be prepared and broken according to the procedure outlined by the American Welding Society. Specimens shall be considered as passing if the fractured surface shows complete penetration throughout the entire thickness of the weld and the absence of slag inclusion and porosity to the extent that there are no gas pockets or slag inclusions exceeding  $1/16$ " in greatest dimension and the sum of the greatest dimension of all such defects in any square inch of weld metal area does not exceed  $3/8$  of an inch.

(e) It is planned that approximately 10% of the welds will be radiographed. The welds shall be held to a predetermined set of standards prepared and agreed to by the Contractor's welding engineer, the Company's Engineer of Gas Construction, and representatives of the company making the radiographic tests.

The Contractor shall, when required, cut a 3/4" hole in the pipe approximately 6" away from the circumferential welds for the insertion of radium capsule for the radiograph and shall reweld these openings after the radiographs have been taken. A monthly order for the cutting and rewelding of these radiograph holes will be issued when required.

(f) Should any weld tested fail to satisfy the preceding requirements, the expense of cutting out, testing, and rewelding shall be borne by Contractor; however, the cost of cutting, testing and replacing welds which comply with the above requirements will be paid by Company as additional work in accordance with paragraph 22 of the General Conditions.

#### 14. APPLICATION OF PROTECTIVE COATING

(a) After welding and subsequent to any testing required, Contractor shall apply the protective covering materials, specified hereinafter, on all exposed bare metal on the transmission pipe at the field joints, bends, and those valves, fittings and necessary parts of said gas pipe line which are to be buried.

(b) Prior to application, all surfaces to which protective coatings are to be applied, shall be thoroughly cleaned of all rust, scale, grease, dirt and other foreign matter to the satisfaction of the Constructor and shall be thoroughly dry.

(c) Protective coating shall be applied to the 30" O.D. pipe in the following manner:

- (1) Trim away loose portions of adjacent coating.
- (2) Apply primer (Pabco #1089) and allow to dry.
- (3) Apply one coat of enamel (Pabco #2168)  
(average thickness 1/8", minimum 3/32").
- (4) Wrap with rag felt paper (Pabco #192): do not allow this wrapper to lap over yard applied coating.
- (5) Apply one coat of enamel (Pabco #2168)  
(average thickness 1/8", minimum 3/32").
- (6) Wrap with rag felt paper (Pabco #181) mica finish to the outside, extend this wrapper over yard wrap a minimum of 3".

(d) At no time shall the enamel (Pabco #2168) be heated in excess of 410°. The exact temperature shall be such as to provide a 1/8" thick layer of enamel on each coat. Each kettle shall be equipped with a thermometer so that the temperature of the enamel may be accurately determined. The Contractor shall not add flux or any additive to the asphalt or enamel without express permission of the Constructor. Blisters, bubbles, skips, sags, and other defects impairing the quality of the wrap will not be permitted.

(e) Protective coating for the 24" and 20" main and fittings shall be applied in a like manner, however, the materials involved shall be as follows:

Primer - Fabco #3972  
 Asphalt - Fabco Floatine Type "P"  
 Felt - Fabco #190

(f) Before lowering the pipe into the trench, Company may require the entire line to be tested with an electric "holiday detector." Holiday detector shall be furnished by Contractor and shall be of a type and make acceptable to Company. The Contractor shall repair all "holidays," however, Company will stand the expense of repairing any invisible "holidays" on the yard coated pipe. If the coating is damaged during lowering-in operations, the pipe shall be raised from the trench to make the repair, unless the damage can be repaired in place, and again tested for holidays.

#### 15. LOWERING

(a) After welding and coating the joints and bends the pipe shall be carefully lowered into the trench in a manner approved by the Constructor. Under no condition shall it be forced or dropped into the trench. All pipe shall be inspected by Contractor after it has been lowered into the trench and all abraded or damaged portions of the protective coating shall be wrapped or repaired to the satisfaction of the Constructor. All lowering shall be done during the early morning hours and immediately "shaded" to a depth of 10" above the pipe.

(b) To keep the stresses, in the operating pipe line, to a minimum it is desired that the maximum amount of pipe be crowded into the trench. The maximum compression shall be introduced into the line by use of vertical slack loops. Such loops shall be spaced at intervals of approximately 1500 feet where bends do not interfere. On sections where bends are present, the location of the slack loops will be designated by Constructor. Pipe resting in its final position between slack loops over-bends, side-bends, and sag-bends must be immediately shaded to a depth of 10".

(c) The pipe must rest on the bottom of the trench, for the entire length of the section lowered, before being backfilled. Any space between the pipe and the trench bottom shall be filled with earth worked under the pipe. Where the trench lies in rock, a cushion of earth not less than 6" thick shall be placed in the bottom of the trench for bedding the pipe.

(d) Particular care shall be taken in installing the pipe in casing, under highway crossing and railroad crossings, that wrapping is not damaged in any manner and that the ends of casing are sealed as required by drawing 281050.

#### 16. BACKFILLING

(a) Following the lowering in and "shading" operation, the backfilling shall be completed as soon as possible. In the case of highway or railroad crossings and in rocky terrain, the excavation shall be left open until the Company's representative has approved the work, and then it shall be immediately backfilled.

(b) Backfill material for all pipe shall be earth placed to a depth of at least 6" above the top of the pipe. The remainder of the trench may be filled with earth or rock, except that backfill in trench through roadways shall be such as is necessary to restore said roadways to their original condition. Where right of way lies in cultivated land and the composition of the top soil differs from that of the sub-soil, Contractor shall set aside the top soil and shall replace same in its original position upon completion of the work.

(c) Where the line is laid in dedicated streets or highways, the backfilling must be done in accordance with City, County or State authority having jurisdiction. On private right of way the line shall be backfilled in accordance with these specifications and the satisfaction of property owner.

(d) On dedicated streets and highways, surplus material shall be hauled away at the expense of the Contractor. On private right of way where permitted by owner, the surplus material shall be neatly heaped up in a mound directly over the trench to such a height as in the Constructor's opinion will provide adequately for future settlement of trench backfill. Surplus material left from this operation shall be evenly distributed and graded over the right of way. Rock which cannot be used in the backfill shall be hauled away and disposed of by Contractor at his expense.

(e) No tamping of backfill will be required, except at roads, highways, railroad crossings, banks of creek, and ditches in which cases the material shall be carefully placed and thoroughly compacted to the satisfaction of the agency having jurisdiction. Contractor shall guarantee backfill, in such locations, against settlement for a period of one year. On steep slopes where there is a possibility of the backfill washing out, breakers made with sacks filled with soil shall be placed in the trench over the pipe or timber breakers installed across the trench, whichever the Company Engineer considers most appropriate for providing the desired protection.

#### 17. TEST AND ACCEPTANCE

(a) The Contractor shall test all 24" and 20" main to determine to the satisfaction of the Constructor, if any leakage occurs. Tests shall be made as follows:

(1) Before pipe joints are wrapped and coated, air shall be introduced into the pipe line until a gauge pressure of 100 lb/sq.in. <sup>is recorded.</sup> while air pressure is maintained all welded field joints shall be tested with soap suds as directed. This test shall be made on the string of pipe line completed each day.

(2) After the pipe lines are completed and in place in the trench, air pressure at 100 p.s.i. gauge shall be maintained in the entire pipe line without any loss for a continuous period of 48 hours. A suitable recording device shall be used which will record on a chart the fluctuation and intensity of the air pressure during the test period.

(b) Should any leaks or breaks occur, they shall be repaired by the Contractor to the complete satisfaction of the Constructor and if said leaks or breaks are, in the Constructor's opinion, due to any fault of the Contractor, the expense of such repair shall be borne by the Contractor. The repair of leaks or breaks which, in the opinion of the Constructor, are not the fault of the Contractor, will be paid for by Company in accordance with the provisions of paragraph 22 of the General Conditions.



(c) Contractor will not be required to air test the 30" main; however, acceptance of the work (30", 24" and 20"), will be conditioned upon the pipe lines being free from leaks and breaks after introduction of gas into the completed pipe lines at the required working pressures. Contractor shall guarantee the pipe lines against leaks and breaks in field work for a period of one (1) year.

18. RATE OF PROGRESS

(a) Contractor will be required to complete a minimum of 1,500 ft. of pipe line per calendar day. Should the Contractor not maintain the schedule through no fault of the Company, the Company reserves the right to cancel the Contract, and take such action as is necessary to complete the work on schedule. In this respect Company may employ their own forces or those of another Contractor to maintain the required schedule and Contractor shall cooperate fully with these crews to this end.

(b) Should Contractor be delayed by factors which in the opinion of the Constructor are not the fault of Contractor, Contractor may claim an extension of time provided such claim is filled within one week from date of cause of delay.

19. CLEANING UP

(a) As soon as the pipe is laid and backfilled, the Contractor shall clear the right of way and surrounding area of any rubbish, brush, drums, rocks scattered by blasting and boulders uncovered in tillable land, in a manner satisfactory to the land owner. Ruts and other ground damage due to the Contractor's operations shall be repaired by Contractor.

When the pipe line lies in dedicated streets, roads, and highways, Contractor shall do all necessary work, including sweeping to leave the street and/or sidewalk in a presentable condition throughout the area. He shall maintain in proper condition all trench surface until paving is completed and shall make a final clean-up subsequent to paving if done by Contractor.

(b) Contractor shall during the progress of the contract maintain the job site in a clean, orderly condition at all times. Contractor is referred to paragraph 21 of the General Conditions regarding his liability in this respect.

20. RAILROAD AND ROAD CROSSINGS

(a) Company will obtain all necessary permits to cross railroads and public and private roads.

(b) At railroad and State Highway crossings, the pipe line shall be installed in casing in accordance with requirements of Drawing 281050. No open trenching will be permitted within the limits of the casing length as shown.

X (c) Before commencing any work beneath railroad tracks or State Highway, Contractor shall notify Constructor, in writing, as to the date such work will be commenced. Such notice shall be given five (5) days in advance to permit Company to notify the Railroad Company and the State Division of Highways respectively, so that the interested parties may arrange to have representative present when the work is performed. Expense of such inspection, if required, shall be borne by Contractor.

(d) Contractor shall take suitable precautions to prevent interference with electrically controlled railway signals, telegraph, telephone or other circuits on highway, street, or railroad rights of way. Should it appear necessary to interfere or obstruct traffic on highways, Contractor shall, prior to any such interference or obstruction, consult with the agency having jurisdiction and shall conform to all requirements thereof and to the satisfaction of the Company's representative in charge. He shall not under any circumstances interfere with traffic on any railroad and shall not unnecessarily obstruct traffic on any county or private road. Contractor shall be governed by State, County and Municipal regulations regarding limitation on the width of roadway which may be obstructed at any time, and in regarding the necessity for constructing any temporary detours. All areas that are excavated or otherwise disturbed by Contractor within rights of way of railroads and highways and on county or private roads shall be restored by Contractor to the satisfaction of the agency having jurisdiction.

## 21. PAVING

(a) Contractor shall, if required, replace pavement and sidewalks where removed as a result of his operations. He shall replace the surfacing in a manner and with materials, satisfactory to the State, County, or City agencies having jurisdiction and shall guarantee the surfacing against settling, cracking or other defects, for a period of one year. In the event of such failure he shall repair or replace the damaged surface at no cost to the Company. Paving shall be replaced within one week subsequent to backfilling unless an extension of time is permitted by Company's representative in charge.

(b) Company may, at its option, replace surfacing on the section of the 30" main north from the Junipero Serra Blvd. crossing to Martin Substation, and on the section of 24" and 20" from the Skyline east on Whipple Road and Brittan Ave. to Main 101. Contractor shall replace all other surfacing at a price included under items 1, 2, and 3 of the proposal. In the event Company exercises its option to replace pavement on these sections, Contractor's responsibility with regard to the surfacing shall be limited to adequate compaction of backfill. He shall guarantee his work against settlement for a period of one year. Should the replaced surface settle due to insufficient compaction, Contractor shall remove pavement, add and compact fill material and resurface at his own expense to the satisfaction of agency having jurisdiction.

(c) For purposes of computing the area of surface replaced, the maximum width of strip for which payment will be allowed will be the pipe diameter, plus 12", unless specifically excepted by Company's representative in charge. The length shall be the actual footage of pipe line installed under the respective surfaces.

(Copy this on your Letterhead)

CONSTRUCTION  
OF  
30", 24" and 20" GAS TRANSMISSION MAINS NOS. 132 and 147  
FROM  
CRYSTAL SPRINGS LAKE TO MARTIN SUBSTATION  
FOR THE  
PACIFIC GAS AND ELECTRIC COMPANY

P R O P O S A L

July \_\_\_\_\_, 1948

Purchasing Agent  
 Pacific Gas & Electric Co.  
 245 Market Street  
 San Francisco, California

Dear Sir:

Having carefully examined the drawings and Specification No. 3111 for the construction of 30", 24" and 20" gas transmission mains in San Mateo and San Francisco Counties, California, the undersigned agrees to furnish all labor, fully operated equipment, tools and such materials as are not supplied by Company to complete the work as indicated and described in and in accordance with the drawings and specifications attached hereto for the following sums in lawful money of the United States.

Item 1 -- For complete installation of all 30" O.D. gas pipe line including highway and track crossings and all work preliminary to "hot" tie-ins and all backfilling subsequent to such tie-ins.

Per lineal foot of pipe \$ 4.65

Item 2 -- For complete installation of all 24" O.D. wrapped gas pipe line including all work preliminary to "hot" tie-ins and all backfilling subsequent to such tie-ins.

Per lineal foot of pipe \$ 3.75

Item 3 -- For complete installation of all 20" O.D. wrapped gas pipe line including highway and railroad crossings and all work preliminary to "hot" tie-ins and all backfilling subsequent to such tie-ins.

Per lineal foot of pipe \$ 3.62

Above items include unloading and stringing of all materials and the loading and hauling of all materials except pipe which is covered under Items 6, 7, and 8.

Item 4 -- For additional depth of trench over 6' 0" deep, as may be ordered by Constructor under the provisions of paragraph 6 of the specifications, prices as follows:

(a) Machine Work

(1) Normal soil; a price per cubic yard  
 of \$ .05

(2) Rocky soil; a price per cubic yard  
 of \$ .10

## PACIFIC GAS AND ELECTRIC COMPANY

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SAN MATEO COUNTY.

<u>FOREMAN</u>	<u>S.T.</u>	<u>O.T.</u>
Superintendent	2.875	5.75
Line-up	2.625	5.25
Welder	2.625	5.25
Labor	2.00	4.00
Carpenter	2.25	3.375
 <u>WELDERS</u>	 2.375	 4.75
 <u>FITTERS</u>	 2.375	 4.75
 <u>APPRENTICE FITTER</u>	 1.625	 3.25
 <u>ENGINEERS</u>		
Backhoe Operator	2.525	5.05
Truck Crane Operator	2.525	5.05
Truck Crane Operator	2.375	4.75
Trencher Operator	2.275	4.55
Sideboom Operator	2.375	4.75
Dozer Operator	2.225	4.45
Oiler	1.875	3.75
Compressor Operator	2.175	4.35
Mechanic	2.225	3.3375
Mechanic Helper	1.875	2.8125
Scoopmobile Operator	2.275	4.55

\* All above rates are double-time for overtime, except mechanics and helpers, which is time and one-half and double-time on Sundays and Holidays.

<u>TRUCK DRIVERS</u>		
Flat Bed Trucks	1.6225	2.43
Low Bed Trucks	1.90	2.85
Dump Trucks	1.71	2.56

\* All overtime time and one-half.

LABOR

General Labor	1.525	2.2875
Wrapper	2.00	3.00
Cribber	1.775	2.6625
Powderman	1.775	2.6625
Flagman	1.525	2.2875
Watchman	1.525	2.2875
Air Tool	1.65	2.475

\* Overtime  $1\frac{1}{2}$  for first 4 hrs. after 8 hrs., and double-time thereafter.  
 $1\frac{1}{2}$  on Saturdays, for first 4 hrs., double-time thereafter. Double-time on Sundays and Holidays.

CARPENTERS

Carpenter	2.125	3.1875
Apprentice Carpenter.	1.875	2.8125

\* Overtime  $1\frac{1}{2}$  except Sundays and Holidays double-time.



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LIST OF SMALL TOOLS RENTED TO PACIFIC PIPELINE & ENGINEERS, LIMITEDAND STOLTE, INCORPORATED, A JOINT VENTURE.PAVEMENT BREAKERS.

58928	Thor
39026	Thor
P-302	Thor
74707	Thor
58923	Thor
P-2323	Thor
P-2085	Thor
58928	Thor
K81-107168	Sullivan
K81-107219	Sullivan
534535	I.R.
534531	I.R.

SPADES.

28180	I.R.	T handle
28274	I.R.	T handle
28404	I.R.	T handle
28894	I.R.	T handle
28396	I.R.	T handle
32657	Thor	D handle
71901	Thor	D handle
71640	Thor	D handle
59478	Thor	D handle
51703	Thor	D handle
32635	Thor	D handle
50542	Thor	D handle
71851	Thor	T handle
71914	Thor	T handle
71878	Thor	T handle
51680	Thor	T handle

JACKHAMMERS.

19192	Worthington
19160	Worthington
19163	Worthington
69860	Thor
70094	Thor

TAMPERS.

5430441	Thor.
757090	Thor
500762	Thor
1051705	Thor
595238	Thor
498418	Thor.

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The cost of the work will include:

(a) All materials and supplies purchased by the Contractor including transportation thereof, and all labor, tools, machinery, equipment, services, power, fuel, water, ice, explosives and miscellaneous materials or supplies necessary for either temporary or permanent use and furnished by the Contractor for the performance of the work. Items of machinery, equipment, tools, and destructible items valued at \$300.00 or less shall be charged directly to the work. The Pacific Gas and Electric Company has the option to either keep the residue of such items upon completion of the work or to sell them to us at its then value as determined by mutual agreement.

(b) Rental charges on construction equipment owned by the Contractor and used in the performance of the work to be as per schedule attached, in accordance with the latest manual of the Associated Equipment Dealers.

(c) Loading and unloading of construction equipment owned or rented by the Contractor and of such repair parts and spare parts as are not included in the rental and as are not made necessary by defects in such equipment, or parts thereof, or by the fault or negligence of the Contractor or its employees; the transportation thereof to the place or places where it is to be used in connection with the work, and return transportation thereof to point of origin.

(d) Repairs and repair and spare parts for construction equipment as are not included in the rental and as are not made necessary by defects in such equipment or by the fault or negligence of the Contractor or its employees.

(e) All subcontracts.

(f) To the extent authorized or approved by the Owner (1) transportation and traveling expenses to and from the site of the work of the necessary field forces for the economical and successful prosecution of the work, these expenses shall be limited to field employees and do not include supervisory or other employees of the contract. (2) transportation and traveling and traveling expenses of the Contractor's

## PACIFIC GAS AND ELECTRIC COMPANY

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representatives for required travel, and (3) expenses of procuring labor and expediting the production and transportation of materials and equipment and inspecting such materials and equipment; also actual expense incurred by the Contractor in moving to the site of the work such skilled construction workers and mechanics as may not be available for employment locally.

(g) Salaries of construction superintendents, timekeepers, material checkers, warehouseman, foremen, engineers, field office managers, purchasing agents, accountants and other field employees of the Contractor whose full time is devoted to the work.

(h) Premiums on bonds and insurance required hereunder including fire, theft and collision insurance on the Contractor's equipment, Workmen's Compensation, public liability, and property damage insurance, and fees for permits and licenses paid by the Contractor.

(i) Payments from its own funds made by the Contractor under the Federal Insurance Contributions Act, Federal Unemployment Tax Act, any state or local unemployment compensation law, and any disbursement on account of this contract which the Contractor may be required by law to pay on or for any equipment, process, materials, supplies or personnel, and license fees or royalties on patents used.

(j) All sales taxes, use taxes excise taxes, transportation taxes, California business and occupation (gross sales) taxes, and other taxes, federal, state or local, except state corporation franchise taxes and federal taxes measured by income.

(k) Losses, expenses, or settlements not compensated by insurance or otherwise (including any such settlements to be made only with the written consent of the Constructor), actually sustained by the Contractor in connection with the work, except to the extent that any such loss or expense is due to the failure on the part of the corporate officers of the Contractor, or of its other representatives having supervision or direction of the operation of the work as a whole, to exercise good faith or the standard of

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care which they normally exercise in the conduct of the business of the Contractor.

(l) The cost of reconstructing and replacing any of the work destroyed or damaged, not covered by insurance, and not caused by failure to comply with the standard of care normally exercised, but expenditures under this subparagraph must have written approval of the Owner in advance.

(m) Telegrams, long-distance telephone calls, postage, blueprints, duplicating, photostating and other similar expense incurred directly in connection with the prosecution of the work.

(n) Such other costs as are not expressly excluded by provisions of this proposal.

The cost of the work shall not include the salaries of the Contractor's executive, general, administrative or supervisory officers, nor expenses incurred in conducting the Contractor's main office or regularly established branch offices, such as rent, accounting, local telephone service, general office stenographic and messenger service; nor overhead expenses of any kind except as specifically authorized herein; nor interest on capital employed or on borrowed money.

In view of the fact that this work is being done on the basis of actual net field cost, plus a flat fee, we request that we be reimbursed semi-monthly in full, for the actual expenditures incurred during the preceding calendar week, and that the fee and our share of the savings be payable upon completion and acceptance of the work.

Very truly yours,

PACIFIC PIPELINE & ENGINEERS, LIMITED  
AND STOLTE, INC.  
A Joint Venture

By \_\_\_\_\_

Alfred B. Swinerton

ABS:ES  
Attachment



**ELGIN PIPELINE & EQUIPMENT, LIMITED and OTHER, INCORPORATED**

**SCHEDULE OF EQUIPMENT RENTAL RATES FOR WORK ON**

**RECONSTRUCTION OF GAS TRANSMISSION LINES**

**REG. 132 & 147, REGISTRATION NO. 1011.**

DESCRIPTION	RENTAL RATES		
	PER MONTH	PER WEEK	PER DAY
<b>Air Compressor-High-Pressure, Gasoline</b>			
100 cfm, gal	\$ 207.00	\$ 70.00	\$ 23.90
150 cfm, gal	285.00	95.00	32.00
210 cfm, gal	370.00	130.00	44.00
<b>Air Compressor-High-Pressure, Diesel</b>			
105 cfm	250.00	84.00	28.00
150 cfm	334.00	112.00	37.50
210 cfm	421.00	154.00	51.00
315 cfm	495.00	165.00	55.00
<b>Air Tools &amp; Accessories</b>			
<b>Rock, Rotating, Air</b>			
Rock Drill, 1 to 50 lbs., incl.	35.00	12.00	4.00
Rock Drill, 51 to 60 lbs., incl.	40.00	14.00	4.75
Rock Drill, 61 to 80 lbs., incl.	45.00	15.00	5.00
Mounted Rock Drill	65.00	23.00	8.00
Vapor Drills (with air hoist)	121.00	41.00	20.50
Vapor Drills (hand hoist)	165.00	55.00	29.00
<b>Grinders, Air</b>			
Grinders	34.00	12.00	4.00
<b>Samers, Air</b>			
Chippers	20.00	8.00	3.00
Pavement Breakers, 1 to 60 lbs., incl.	35.00	12.00	4.00
Pavement Breakers, 70 to 90 lbs., incl.	41.00	14.00	5.00
Shooting Drives - Air	60.00	20.00	7.00
<b>Hoists, Air</b>			
1 to 1,500 lbs. incl., single drum	36.00	13.00	6.50
1,501 to 2,500 lbs. incl., single drum	71.00	24.00	8.00
1,500 to 2,500 lbs., incl., double drum	90.00	30.00	10.00
<b>Pumps, Pneumatic Sump</b>			
Small	100.00	34.00	11.50
Medium	125.00	42.00	14.00
<b>Spades, Clay</b>			
Clay Spades (1 sweep) small	25.00	8.00	3.00
Clay Spades (1 sweep) large	29.00	10.00	3.50
<b>Tempers - All Sizes</b>	26.00	10.00	3.50

DESCRIPTION	PER MONTH	PER YEAR	PER DAY
<b>Engines, Reel, Towed</b>			
Engine-driven	\$ 92.00	\$ 31.00	\$ 11.00
Traction-driven	72.00	24.00	8.00
<b>Buckets, Glassball</b>			
1/4 Cu. Yd.	70.00	24.00	8.00
3/8 Cu. Yd.	72.00	25.00	8.50
1/2 Cu. Yd.	84.00	29.00	9.50
5/8 Cu. Yd.	96.00	30.00	10.00
3/4 Cu. Yd.	102.00	35.00	12.00
<b>Cranes</b>			
Truck, gasoline or diesel engine-powered (complete with boom & mounted on truck but not including bucket)			
5,000 to 9,500 lbs. 10 ft. radius	556.00	186.00	62.00
9,500 to 14,000 lbs. 10 ft. radius	614.00	205.00	68.50
14,000 to 18,000 lbs. 10 ft. radius	777.00	259.00	86.50
18,000 to 24,000 lbs. 10 ft. radius	870.00	290.00	97.00
24,000 to 29,000 lbs. 10 ft. radius	1025.00	343.00	114.50
29,000 to 40,000 lbs. 10 ft. radius	1337.00	446.00	149.00
<b>Dredging Excavators</b>			
Gasoline-engine-driven, no bucket			
1/2 cu. yd.	567.00	189.00	63.00
5/8 cu. yd.	600.00	200.00	67.00
3/4 cu. yd.	702.00	234.00	78.00
1 cu. yd.	849.00	283.00	94.50
1-1/4 cu. yd.	993.00	331.00	110.50
<b>Hoists</b>			
Gasoline, Reel-drum			
55 to 65 H.P.	195.00	65.00	22.00
65 to 75 H.P.	207.00	69.00	23.00
75 to 90 H.P.	215.00	72.00	24.50
90 to 110 H.P.	261.00	87.00	29.00
<b>Kettles, Tar &amp; Asphalt Heating</b>			
Oil or Diesel Burning, Portable.			
45 to 55 gal.	31.00	11.00	4.00
255 to 355 gal.	60.00	20.00	7.00
<b>Lighting Plants</b>			
2,000 to 4,500 watts	86.00	29.00	10.00
4,500 to 6,000 watts	103.00	35.00	12.00
6,000 to 9,000 watts	125.00	42.00	14.00
<b>Pumps, Discharge</b>			
Gasoline Engine Driven			
3" Single action	41.00	14.00	5.00
3" Double action	55.00	19.00	6.50
4" Single action	45.00	16.00	5.50
4" Double action	62.00	23.00	8.00
<b>Pumps, Centrifugal-</b>			
Gasoline Engine Driven			
1 1/2" 7 H	39.00	13.00	4.50
2" 7 to 10 H	45.00	15.00	5.00
3" 15 to 20 H	56.00	19.00	6.50
4" 30 to 40 H	89.00	30.00	10.00

DESCRIPTION	PER HOUR	PER MIN	PER DAY
<b>Dozer</b>			
Chain-Gasoline Engine driven.			
36"	\$ 190.00	\$ 64.00	\$ 21.50
48"	290.00	67.00	22.50
60"	320.00	74.00	25.00
<b>Shovels &amp; Back Hoes</b>			
Gasoline-Engine-Driven-Dipper Incl.			
1/2 cu. yd.	575.00	192.00	64.00
5/8 cu. yd.	591.00	197.00	64.00
3/4 cu. yd.	711.00	239.00	80.00
1 cu. yd.	819.00	273.00	91.00
1-1/4 cu. yd.	977.00	323.00	111.00
Diesel-Engine-Driven-Dipper Incl.			
1/2 cu. yd.	640.00	220.00	73.50
5/8 cu. yd.	720.00	260.00	87.00
3/4 cu. yd.	810.00	273.00	91.00
1 cu. yd.	1095.00	363.00	121.00
1-1/4 cu. yd.	1271.00	424.00	141.50
<b>Trenching Machines</b>			
Foreman J10 Ladder Type or Equal	2000.00	667.00	137.00
<b>Welding Machines</b>			
Gasoline-Engine Driven			
200 amp. gas. engine driven	62.00	21.00	9.50
300 amp.	117.00	39.00	13.00
Diesel-Engine Driven			
300 amp.	181.00	61.00	20.50
<b>Anglegrinder</b>			
42 to 66 H.P.	149.00	50.00	17.00
66 to 89 H.P.	164.00	55.00	18.50
89 to 135 H.P.	194.00	65.00	22.00
<b>Bulldozers</b>			
42 to 66 H.P.	124.00	42.00	14.00
66 to 89 H.P.	135.00	45.00	15.00
89 to 135 H.P.	161.00	54.00	18.00
<b>Loaders - Front End.</b>			
Wheel-type Tractor Compl. w/attach.			
1/2-1/2 cu. yd.	127.00	109.00	36.50
3/8 cu. yd.	157.00	120.00	40.00
1 cu. yd.	201.00	167.00	56.00
<b>Pipelayer Attachments.</b>			
40 to 60 H.P.	220.00	74.00	25.00
60 to 85 H.P.	250.00	86.00	29.00
85 to 135 H.P.	341.00	114.00	38.00
<b>Pump for Gravel Tractor Accessories.</b>			
1 or 2 valve	60.00	20.00	7.00
3 valve	75.00	26.00	9.00

DESCRIPTION	EST. MONTH	EST. WEEK	EST. DAY
<b>Rollers, Tamping</b>			
Changefoot, any number of ft. Single drum	\$ 71.00	\$ 24.00	\$ 8.00
<b>Scissors</b>			
Medium, 5501 to 7000 lbs., incl.	112.00	38.00	13.00
Heavy, 7001 to 11000 lbs., incl.	165.00	55.00	18.50
<b>Tractors, Diesel</b>			
Grader, Engine			
46 to 52 H.P.	452.00	151.00	50.50
52 to 62 H.P.	527.00	176.00	59.00
62 to 72 H.P.	599.00	200.00	67.00
72 to 89 H.P.	715.00	236.00	79.50
89 to 135 H.P.	859.00	287.00	96.00
<b>Winch Grader Tractor Assembly</b>			
For any size tractor, single-drum	55.00	19.00	6.50
For any size tractor, double-drum	85.00	29.00	10.00
For any size tractor, four-drum	177.00	59.00	20.00
<b>Winches, Towing</b>			
52 to 66 H.P.	102.00	34.00	11.50
66 to 89 H.P.	189.00	62.00	21.00
89 to 145 H.P.	214.00	72.00	24.00
<b>Automotive Equipment</b>			
Passenger Car	150.00	50.00	20.00
Pickup, 1/2 ton	100.00	35.00	12.00
Pickup, 3/4 ton	100.00	35.00	12.00
Flatbed, 1 ton	150.00	50.00	17.00
Flatbed, 1 1/2 ton	180.00	60.00	20.00
Flatbed, 2 ton	250.00	84.00	28.00
Flatbed, 2 1/2 ton	300.00	100.00	34.00
Loaded, 20 ton	600.00	200.00	67.00
Dump Truck, 2 cu. yd.	240.00	80.00	27.00
Dump Truck, 4 cu. yd.	350.00	117.00	39.00
Dump Truck, 6 cu. yd.	450.00	150.00	50.00

Equipment which may be required, but which is not listed in the above schedule will be charged for at rates listed in the latest edition of the "Compilation of Rental Rates for Construction Equipment", published by the Associated Equipment Distributors. For equipment not listed in this publication, rentals will be charged for at monthly rates equaling 10 percent of the delivered purchase price. The weekly rate for such equipment will be taken at approximately one-third of the monthly rate and the daily rate at approximately one-third of the weekly rate.

The rental period for any piece of equipment will begin at the time it leaves its present location and rental will be charged until it has been returned to that location. In computing rental payments for a fraction of a week or a month, the governing rate, daily, weekly, or monthly will be that which will result in the lowest cost to the purchaser.



6 M.G. 98013' & 85737  
8/6/48

20" #24"

④

Extra Dep th.

30"

a) Machine Work

1) Normal Soil + 3' 1000 ft.  
+ 3' 1000 ft.

(Felt. & Loring) at 1st Pass  
(Crocker Est. Dairy Plant)

3000 cu ft.  
3.5

15000  
4000

10500.0

180 yds  
390 yds

2) Rocky Soil + 2' 3000 ft. (Various)

780 260 yds.

b) Handwork

1) Normal Soil

130 yds.

2) Rocky Soil + 2' 500' (Various)

500

1000

3.5

5000

3000

3500.0

24" #20"

a)

1)

—

2)

+ 2'

1000' Various

260 yds.

1 360 yds.

180 yds.

b)

1)

+ 2'

500'

Various

2)

+ 2'

500'

—

2 / 10

GMB 9815  
8/6/48

⑦

Pavement

a)  $1750 \square' + 18,900 \square'$

b.)

c.)

d.)  $\left\{ \begin{array}{r} 6650 \\ 10500 \\ \hline 17150 \end{array} \right.$

e.)  $2400' = 3.5$

$$\begin{array}{r} 12000.0 \square' \\ 7200 \\ \hline 8400.0 \square' \end{array}$$

$18,000 \square'$

$$\begin{array}{r} 2400 \\ 3000 \\ \hline 5400 \\ 35 \\ \hline 27000 \\ 16200 \\ \hline 18900.0 \end{array}$$

$6000 \quad 5000$

6<sup>th</sup>

2400 ft.

Share Car to Sharps  
prop.

3,000

Martin the  
end

10500 □

120  
1.86  
96.00  
102.00

100,000

1900  
35  
950.0  
950.0  
67.00  
6650.0

$$\begin{array}{r}
 87 \quad 6000 \\
 \underline{27 \overline{) 21000}} \quad \underline{3.5} \\
 30000 \\
 \underline{18000} \\
 21000.0
 \end{array}$$

$$\begin{array}{r}
 2000 \\
 \underline{3.5} \\
 10000 \\
 \underline{6000} \\
 7000.0 \\
 200
 \end{array}$$

$$\begin{array}{r}
 27 \overline{) 7000} \\
 54 \times \\
 \underline{160} \\
 162
 \end{array}$$

## (b) Hand Work

- (1) Normal soil; a price per cubic yard  
of \$1.50
- (2) Rocky soil; a price per cubic yard  
of \$2.00

Payment under this item will be made on the basis of the total length of pipe line installed at extra depths. The pricing unit for Item four is defined as the volume of material excavated as measured in place before removal.

Item 5 - For complete installation of 2" blow-off valve with 3/4" condensate line as shown on Drawing #181011.

- (a) A unit price per installation of  
2" blow-off \$50.00
- (b) A unit price per foot for  
3/4" pipe \$1.00

Item 6 - For the hauling of all 30" O.D. pipe from Watson, California to the job site:

A price per foot of \$1.20/ft.

Item 7 - For loading and hauling all 24" O.D. pipe from Santa Clara to the job site:

A price per foot of \$1.80/ft.

Item 8 - For loading and hauling all 20" O.D. pipe from Santa Clara to the job site:

A price per foot of \$1.40/ft.

Payment for Items 7 and 8 will be based on actual footage installed. Item 6 will be based on footage hauled as Contractor will be required to haul the entire 100,320 ft. of 30" on order from Watson, California. The amount of 30" over that required for the job will be delivered to Martin Station.

Item 9 - For replacement of surfacings as set forth under paragraph 21 of the Specification if ordered by Constructor, a price per square foot of surface replaced:

- |                                      |    |       |             |
|--------------------------------------|----|-------|-------------|
| (a) 6" black base with 2" topping    | \$ | _____ | per sq. ft. |
| (b) 6" concrete                      | \$ | _____ | " " "       |
| (c) 9" concrete base with 2" asphalt | \$ | _____ | " " "       |
| wearing surface                      | \$ | _____ | " " "       |
| (d) 3" cold lay asphalt              | \$ | _____ | " " "       |
| (e) Concrete sidewalk                | \$ | _____ | " " "       |

Item 10 - If required by Company, \_\_\_\_\_ agree to furnish a bond conforming to the general form appended to the Specifications in amount of 100 per cent of the total contract price, for the actual cost of the premium therefor. The premium will be \_\_\_\_\_ per cent of the contract price.

\_\_\_\_\_ hereby certify that \_\_\_\_\_ am/are licensed under Contractor's License Law of the State of California, the number of the license is \_\_\_\_\_, and its date of expiration is \_\_\_\_\_.

\_\_\_\_\_ Agree to commence work hereunder within 5 days after notification to do so, and to complete said work within \_\_\_\_\_ calendar days.



Signature \_\_\_\_\_

Address \_\_\_\_\_

Signatures of Individual Members of Firm:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature of President of Corporation \_\_\_\_\_

Signature of Secretary of Corporation \_\_\_\_\_

Corporation is organized under the laws of the State of \_\_\_\_\_

☐ SECRETARY (Original)      ☐ MANAGER  
☐ CONTRACTOR (Duplicate)    ☐ V. P. IN CHARGE  
☐ AUDITING DEPARTMENT    ☐ .....  
☐ PURCHASING DEPT.        ☐ .....

**Contract Number**

**CONTRACT FOR  
PERFORMANCE OF WORK**

Render invoice in triplicate for each payment when due, showing Contract No. or Specification No. on invoice and forward to Pacific Gas & Electric Co.

Attention of..... (Address)  
Specification No.....  
Work Supervised by.....  
Charge to.....

hereinafter called Contractor, and PACIFIC GAS AND ELECTRIC COMPANY, a California corporation, hereinafter called Company, hereby agree as follows:

Contractor will at its own risk and expense perform the work hereinafter described and, except as herein otherwise provided, will furnish all labor, equipment and materials required therefor:

Contractor is an independent contractor, and all persons employed by Contractor in connection herewith will be employees of Contractor, and not employees of Company in any respect.

Any drawings or specifications annexed or referred to herein will be deemed part hereof.

All workmanship and materials shall be first class in every respect and subject to the approval of Company's representative in charge. Neither acceptance by Company of the work nor payment therefor shall relieve Contractor from liability under any of the guarantees contained in or implied by this agreement.

Contractor will commence performance hereof when directed to do so by Company, and will complete same within ..... calendar days thereafter. Time is of the essence.

Contractor shall indemnify Company against any and all loss, damage and liability for injury or harm to person or property resulting from, arising out of or in any way connected with the performance hereof, excepting only such injury or harm as may be caused solely by the fault or negligence of Company.

Contractor represents that it has secured the payment of workmen's compensation in compliance with the Labor Code of California.

Contractor represents that it has procured, and agrees to maintain in effect during performance hereof, public liability and property damage insurance with the company or companies named below, of not less than \$100,000 for injury to or death of one or more persons as a result of any one accident, and of not less than \$25,000 for damage to property resulting from any one accident. Contractor agrees to furnish Company within five days after the execution hereof certificates evidencing that each policy of insurance is in full force and effect. Such certificates shall provide that notice will be given to Company at least ten (10) days prior to cancellation or material change in the form of such policies. Company shall, at all times, have the right to inspect the original or a copy of all of said policies of insurance.

Company may withhold from the final payment due hereunder the reasonable value of any claim against it which Contractor has failed to settle pursuant to its indemnity contained herein. Company may retain from any payments due hereunder sufficient funds to discharge any delinquent accounts of Contractor for which liens on Company's property have been or can be filed, and Company may at any time pay therefrom for Contractor's account such amounts as are admittedly due thereon.

As full consideration for performance hereof Company will pay Contractor the following sum, which shall be inclusive of all taxes incurred in the performance hereof:

Payments to Contractor hereunder shall be made as follows:

Executed this.....day of.....19.....

PACIFIC GAS AND ELECTRIC COMPANY

Recommended by.....

By.....

Name of Public Liability Insurance Carrier (\$100,000)

(Contractor)

Name of Property Damage Insurance Carrier (\$25,000)

By.....

☐ SECRETARY (Original)    ☐ MANAGER  
☐ CONTRACTOR (Duplicate)    ☐ V. P. IN CHARGE  
☐ AUDITING DEPARTMENT    ☐ .....  
☐ PURCHASING DEPT.    ☐ .....

**Contract Number**

**CONTRACT FOR  
PERFORMANCE OF WORK**

Render invoice in triplicate for each payment when due, showing Contract No. or Specification No. on invoice and forward to Pacific Gas & Electric Co.

Attention of..... (Address)  
Specification No.....  
Work Supervised by.....  
Charge to.....

hereinafter called Contractor, and PACIFIC GAS AND ELECTRIC COMPANY, a California corporation, hereinafter called Company, hereby agree as follows:

Contractor will at its own risk and expense perform the work hereinafter described and, except as herein otherwise provided, will furnish all labor, equipment and materials required therefor:

Contractor is an independent contractor, and all persons employed by Contractor in connection herewith will be employees of Contractor, and not employees of Company in any respect.

Any drawings or specifications annexed or referred to herein will be deemed part hereof.

All workmanship and materials shall be first class in every respect and subject to the approval of Company's representative in charge. Neither acceptance by Company of the work nor payment therefor shall relieve Contractor from liability under any of the guarantees contained in or implied by this agreement.

Contractor will commence performance hereof when directed to do so by Company, and will complete same within ..... calendar days thereafter. Time is of the essence.

Contractor shall indemnify Company against any and all loss, damage and liability for injury or harm to person or property resulting from, arising out of or in any way connected with the performance hereof, excepting only such injury or harm as may be caused solely by the fault or negligence of Company.

Contractor represents that it has secured the payment of workmen's compensation in compliance with the Labor Code of California.

Contractor represents that it has procured, and agrees to maintain in effect during performance hereof, public liability and property damage insurance with the company or companies named below, of not less than \$100,000 for injury to or death of one or more persons as a result of any one accident, and of not less than \$25,000 for damage to property resulting from any one accident. Contractor agrees to furnish Company within five days after the execution hereof certificates evidencing that each policy of insurance is in full force and effect. Such certificates shall provide that notice will be given to Company at least ten (10) days prior to cancellation or material change in the form of such policies. Company shall, at all times, have the right to inspect the original or a copy of all of said policies of insurance.

Company may withhold from the final payment due hereunder the reasonable value of any claim against it which Contractor has failed to settle pursuant to its indemnity contained herein. Company may retain from any payments due hereunder sufficient funds to discharge any delinquent accounts of Contractor for which liens on Company's property have been or can be filed, and Company may at any time pay therefrom for Contractor's account such amounts as are admittedly due thereon.

As full consideration for performance hereof Company will pay Contractor the following sum, which shall be inclusive of all taxes incurred in the performance hereof:

Payments to Contractor hereunder shall be made as follows:

Executed this..... day of..... 19.....

Recommended by.....

Name of Public Liability Insurance Carrier (\$100,000)

Name of Property Damage Insurance Carrier (\$25,000)

PACIFIC GAS AND ELECTRIC COMPANY

By.....

(Contractor)

By.....

# CONTRACTOR'S BOND

KNOW ALL MEN BY THESE PRESENTS that \_\_\_\_\_

\_\_\_\_\_, as  
Principal, and \_\_\_\_\_, a corporation duly organized under

the laws of the State of \_\_\_\_\_ and doing business in the State of California,  
as Surety, are held and firmly bound unto PACIFIC GAS AND ELECTRIC COMPANY, a corpora-  
tion duly organized and existing under and by virtue of the laws of the State of California, and unto any  
and all persons performing labor or furnishing materials as hereinafter set forth, in the sum of \_\_\_\_\_

\_\_\_\_\_ dollars (\$\_\_\_\_\_) in lawful money of the United States of  
America, for the payment whereof well and truly to be made to said Pacific Gas and Electric Company  
and to said persons, jointly or severally, the said Principal and said Surety bind themselves and their  
respective heirs, personal representatives, successors and assigns, jointly and severally, firmly by these  
presents.

THE CONDITION of the above obligation is such that WHEREAS said Principal and said  
Pacific Gas and Electric Company have entered into and executed a certain agreement in writing bear-  
ing date the \_\_\_\_\_ day of \_\_\_\_\_, 194\_\_\_\_, and hereunto annexed, wherein  
and whereby said Principal has agreed upon the terms and conditions therein set forth to perform  
labor and furnish material to be used in the work to be performed under and pursuant to such contract;

NOW, THEREFORE, if said Principal shall well and truly observe, fulfill and perform all and  
singular the covenants and promises to be observed, fulfilled and performed by said Principal strictly in  
accordance with the terms of said contract and shall well and truly pay in full the claims of all persons  
performing labor upon or furnishing materials to be used in such work, then this obligation shall be  
void, but otherwise shall remain in full force and effect.

This bond is executed and given both for the purpose of securing the performance by said Principal  
of the latter's covenants contained in said contract and for the purpose of complying with the provi-  
sions of Section 1183 of the Code of Civil Procedure of the State of California, and shall, and is hereby  
made to, inure to the benefit of any and all persons who perform labor upon or furnish materials to be  
used in the work described in said annexed contract, so as to give such persons, and such persons are  
hereby given a right of action to recover upon this bond, in any action brought to foreclose the liens pro-  
vided for in said Section 1183, or in a separate suit brought on this bond. No change or alteration of said  
work or modification of said contract between said Pacific Gas and Electric Company and said Prin-  
cipal shall relieve or exonerate said Surety upon this bond.

IN WITNESS WHEREOF said Principal and said Surety have executed these presents this \_\_\_\_\_

\_\_\_\_\_ day of \_\_\_\_\_, 194\_\_\_\_\_.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Company

By \_\_\_\_\_  
Its \_\_\_\_\_